

**UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF TEXAS
TYLER DIVISION**

REALTIME DATA LLC d/b/a IXO,
Plaintiff,

v.

FUJITSU AMERICA, INC. and QUANTUM
CORPORATION,

Defendants.

Case No. 6:16-cv-1035

**COMPLAINT FOR PATENT INFRINGEMENT AGAINST FUJITSU AMERICA, INC.
AND QUANTUM CORPORATION**

This is an action for patent infringement arising under the Patent Laws of the United States of America, 35 U.S.C. § 1 *et seq.* in which Plaintiff Realtime Data LLC d/b/a IXO (“Plaintiff,” “Realtime,” or “IXO”) makes the following allegations against Defendant Fujitsu America, Inc. (“Fujitsu”) and Defendant Quantum Corporation (“Quantum”):

PARTIES

1. Realtime is a limited liability company organized under the laws of the State of New York. Realtime has places of business at 5851 Legacy Circle, Plano, Texas 75024, 1828 E.S.E. Loop 323, Tyler, Texas 75701, and 116 Croton Lake Road, Katonah, New York, 10536. Realtime has been registered to do business in Texas since May 2011. Since the 1990s, Realtime has researched and developed specific solutions for data compression, including, for example, those that increase the speeds at which data can be stored and accessed. As recognition of its innovations rooted in this technological field, Realtime holds 47 United States patents and has numerous pending patent applications. Realtime has licensed patents in this portfolio to many of the world’s leading technology companies. The patents-in-suit relate to Realtime’s development

of advanced systems and methods for fast and efficient data compression using numerous innovative compression techniques based on, for example, particular attributes of the data.

2. On information and belief, Defendant Fujitsu America, Inc. is a California corporation, with its principal place of business at 1250 E Arques Ave, Sunnyvale, CA 94085. Upon information and belief, Fujitsu maintains one or more places of business in the Dallas, Texas area. On information and belief, Fujitsu can be served through its registered agent, C T Corporation System, 1999 Bryan St., Suite 900, Dallas, TX 75201.

3. On information and belief, Defendant Quantum Corporation is a Delaware corporation, with its principal place of business at 224 Airport Parkway, Suite 300, San Jose, CA 95110. Upon information and belief, Quantum maintains a place of business at 783 North Grove Road, Suite 102, Richardson, TX 75081. *See* <http://www.quantum.com/aboutus/contactus/index.aspx>. On information and belief, Quantum can be served through its registered agent, C T Corporation System, 1999 Bryan St., Suite 900, Dallas, TX 75201.

4. On information and belief, Fujitsu and Quantum have entered into a commercial partnership whereby Quantum supplies its DXi deduplication software technology to Fujitsu for incorporation into Fujitsu's products, including but not limited to the ETERNUS CS800 Data Protection Appliance. *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ ("inside the CS800 S2 is Quantum's DXi deduplication software technology. Marcus Schneider, Fujitsu's director of storage product marketing, admitted this. He said: 'We believe the Quantum stack is the most mature on the market. It's a great piece of software.' ... The OEM'ing of Quantum's DXi software by Fujitsu ... is a tremendous boost to both Quantum and Fujitsu."). Fujitsu's ETERNUS CS800 Data Protection Appliance infringes Realtime's patents through its use of Quantum's DXi deduplication software technology, as further described below. Accordingly, Fujitsu and Quantum are properly joined in this action pursuant to 35 U.S.C. § 299.

JURISDICTION AND VENUE

5. This action arises under the patent laws of the United States, Title 35 of the United States Code. This Court has original subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

6. This Court has personal jurisdiction over Defendant Fujitsu in this action because Fujitsu has committed acts within the Eastern District of Texas giving rise to this action and has established minimum contacts with this forum such that the exercise of jurisdiction over Fujitsu would not offend traditional notions of fair play and substantial justice. Fujitsu, directly and through subsidiaries or intermediaries, has committed and continues to commit acts of infringement in this District by, among other things, offering to sell and selling products and/or services that infringe the asserted patents. Upon information and belief, Fujitsu maintains one or more places of business in the Dallas, Texas area. Fujitsu is registered to do business in the State of Texas.

7. This Court has personal jurisdiction over Defendant Quantum in this action because Quantum has committed acts within the Eastern District of Texas giving rise to this action and has established minimum contacts with this forum such that the exercise of jurisdiction over Quantum would not offend traditional notions of fair play and substantial justice. Quantum, directly and through subsidiaries or intermediaries, has committed and continues to commit acts of infringement in this District by, among other things, offering to sell and selling products and/or services that infringe the asserted patents. Quantum maintains a place of business in Texas at 783 North Grove Road, Suite 102, Richardson, TX 75081, and is registered to do business in the State of Texas.

8. Venue is proper in this district under 28 U.S.C. §§ 1391(b), 1391(c) and 1400(b). Fujitsu and Quantum are registered to do business in Texas, and upon information and belief, have transacted business in the Eastern District of Texas and have committed acts of direct and indirect infringement in the Eastern District of Texas. Upon information and belief, Fujitsu maintains one or more places of business in the Dallas, Texas area, and Quantum maintains a place of business at 783 North Grove Road, Suite 102, Richardson, TX 75081.

COUNT I

INFRINGEMENT OF U.S. PATENT NO. 7,161,506

9. Plaintiff realleges and incorporates by reference paragraphs 1-8 above, as if fully set forth herein.

10. Plaintiff Realtime is the owner by assignment of United States Patent No. 7,161,506 (“the ‘506 patent”) entitled “Systems and methods for data compression such as content dependent data compression.” The ‘506 patent was duly and legally issued by the United States Patent and Trademark Office on January 9, 2007. A true and correct copy of the ‘506 patent, including its reexamination certificates, is included as Exhibit A.

Fujitsu Eternus Data Protection Appliance

11. On information and belief, Fujitsu has made, used, offered for sale, sold and/or imported into the United States Fujitsu products that infringe the ‘506 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, Fujitsu’s compression products and services, such as, *e.g.*, the Fujitsu Eternus CS 800, Eternus CS 8000, Eternus CS HE, Eternus CS 200c, Eternus DX, and Eternus LT Data Protection Appliances and all versions and variations thereof since the issuance of the ‘506 patent (“Accused Instrumentality”).

12. On information and belief, Fujitsu has directly infringed and continues to infringe the ‘506 patent, for example, through its own use and testing of the Accused Instrumentality to practice compression methods claimed by Claim 104 of the ‘506 patent, namely, a computer implemented method for compressing data, comprising: analyzing data within a data block of an input data stream to identify one or more data types of the data block, the input data stream comprising a plurality of disparate data types; performing content dependent data compression with a content dependent data compression encoder if a data type of the data block is identified; and performing data compression with a single data compression encoder, if a data type of the data block is not identified, wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of

the data within the data block. Upon information and belief, Fujitsu uses the Accused Instrumentality to practice infringing methods for its own internal non-testing business purposes, while testing the Accused Instrumentality, and while providing technical support, maintenance and repair services for the Accused Instrumentality to Fujitsu's customers.

13. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement "A computer implemented method for compressing data". This system minimizes the amount of data transmitted over a network and stored on a backup device. The Accused Instrumentality employs several data compression techniques to achieve this goal. *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ ("But inside the CS800 S2 is Quantum's DXi deduplication software technology. Marcus Schneider, Fujitsu's director of storage product marketing, admitted this. He said: 'We believe the Quantum stack is the most mature on the market. It's a great piece of software.'"); <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> ("Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set.").

14. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement "analyzing data within a data block of an input data stream to identify one or more data types of the data block, the input data stream comprising a plurality of disparate data types". Even if the determination of whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality were found not to literally meet the "analyzing data within a data block of an input data stream to identify one or more data types of the data block, the input data stream comprising a plurality of disparate data types" limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, determining whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused

Instrumentality performs substantially the same function (for example, to provide the Accused Instrumentality with some parameter of the data that can be used as a basis to select the optimal data compression method among multiple available data compression methods) in substantially the same way (by, for example, identifying some characteristic of the data, beyond a mere descriptor that is indicative of the data type of the data within the data block, that is relevant to selecting among multiple available data compression methods) to achieve substantially the same result (for example, enabling the Accused Instrumentality to select the optimal data compression method from among multiple available data compression methods). *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most mature on the market. It’s a great piece of software.’”); <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times.”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of

backup data on disk for faster, more reliable restores and more data recovery points. Quantum's innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

15. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “performing content dependent data compression with a content dependent data compression encoder if a data type of the data block is identified”. Even if the deduplication function in the Accused Instrumentality were found to not literally meet the “performing content dependent data compression with a content dependent data compression encoder if a data type of the data block is identified” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, deduplication performs substantially the same function (for example, reducing the overall amount of bits to store) in substantially the same way (by, for example, applying a technique based on the specific content of the incoming data in order to present for storage fewer overall bits) to achieve substantially the same result (for example, storage of fewer bits of data overall). *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most mature on the market. It’s a great piece of software.’”);

<http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times.”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

16. The Accused Instrumentality satisfies literally and/or under the doctrine of

equivalents the claim requirement “performing data compression with a single data compression encoder, if a data type of the data block is not identified”. *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most mature on the market. It’s a great piece of software.’”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi6500 systems use compression technology after duplicate blocks have been identified and replaced as part of the deduplication process. With compression, unique data that has been through the data deduplication process can be compressed at a typical ratio of approximately 2:1. This enables you to maximize the storage capacity of your system.”).

17. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block.” Even if the determination of whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality were found not to literally meet the “wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, determining whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality performs substantially the same function (for example, to provide the Accused Instrumentality with some parameter of the data that can be used as a basis to select the optimal data compression method among multiple available data compression methods) in substantially the same way (by, for example, identifying some characteristic of the data, beyond a mere descriptor that is indicative of the data type of the

data within the data block, that is relevant to selecting among multiple available data compression methods) to achieve substantially the same result (for example, enabling the Accused Instrumentality to select the optimal data compression method from among multiple available data compression methods). *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most mature on the market. It’s a great piece of software.’”); <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times.”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total

system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

18. On information and belief, Fujitsu also directly infringes and continues to infringe other claims of the ‘506 patent, for similar reasons as explained above with respect to Claim 104 of the ‘506 patent.

19. On information and belief, all of the Accused Instrumentalities perform the claimed methods in substantially the same way.

20. On information and belief, use of the Accused Instrumentality in its ordinary and customary fashion results in infringement of the methods claimed by the ‘506 patent.

21. On information and belief, Fujitsu has had knowledge of the ‘506 patent at least since the filing of this Complaint or shortly thereafter, and on information and belief, Fujitsu knew of the ‘506 patent and knew of its infringement, including by way of this lawsuit.

22. Upon information and belief, Fujitsu’s affirmative acts of making, using, and selling the Accused Instrumentalities, and providing implementation services and technical support to users of the Accused Instrumentalities, have induced and continue to induce users of the Accused Instrumentalities to use them in their normal and customary way to infringe Claim 104 of the ‘506 patent by practicing a computer implemented method comprising: receiving a data block in an uncompressed form, said data block being included in a data stream; analyzing data within the data block to determine a type of said data block; and compressing said data block to provide a compressed data block, wherein if one or more encoders are associated to said type, compressing said data block with at least one of said one or more encoders, otherwise compressing said data block with a default data compression encoder, and wherein the analyzing of the data

within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block. For example, Fujitsu instructs users of the Fujitsu CS800 Data Protection Appliance about the advantages of its deduplication and compression features. *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most mature on the market. It’s a great piece of software.’”); https://www.fujitsu.com/global/Images/wp-eternus-cs8000-technical-concepts-ww-en_FJJ.pdf at 4 (“ETERNUS CS800 is a data protection appliance optimized for environments where IT-organizations want replace backup to traditional tape by backup to disk. Utilizing leading deduplication and compression technology, the disk capacity requirements can be reduced by up to 95%. ... Data deduplication technology reduces disk capacity requirements such enabling large cost savings.”). Thus, with knowledge of the ‘506 patent gained from at least the filing and service of the original Complaint in this action, Fujitsu encouraged users of the Accused Instrumentalities to use their deduplication/compression functionality to infringe the ‘506 patent, knowing that such use constituted infringement of the ‘506 patent.

23. For similar reasons, Fujitsu also induces its customers to use the Accused Instrumentalities to infringe other claims of the ‘506 patent. Fujitsu specifically intended and was aware that these normal and customary activities would infringe the ‘506 patent. Fujitsu performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the ‘506 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, Fujitsu engaged in such inducement to promote the sales of the Accused Instrumentalities. Accordingly, Fujitsu has induced and continues to induce users of the Accused Instrumentalities to use the Accused Instrumentalities in their ordinary and customary way to infringe the ‘506 patent, knowing that such use constitutes infringement of the ‘506 patent.

24. By making, using, offering for sale, selling and/or importing into the United States the Accused Instrumentalities, and touting the benefits of using the Accused Instrumentalities' compression features, Fujitsu has injured Realtime and is liable to Realtime for infringement of the '506 patent pursuant to 35 U.S.C. § 271.

25. As a result of Fujitsu's infringement of the '506 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Fujitsu's infringement, but in no event less than a reasonable royalty for the use made of the invention by Fujitsu, together with interest and costs as fixed by the Court.

Quantum DXi

26. On information and belief, Quantum has made, used, offered for sale, sold and/or imported into the United States Quantum products that infringe the '506 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, Quantum's compression products and services, such as, *e.g.*, Quantum's DXi software (*e.g.*, powered by Quantum StorNext high-performance file system) (including as incorporated into third-party products such as the Fujitsu Eternus CS800 Data Protection Appliance), DXi 2500, DXi 3500, DXi 4500, DXi 4700 (*e.g.* DXi 4701), DXi 6500 (*e.g.* DXi 6510, DXi 6520, DXi 6530, DXi 6540, DXi 6550), DXi 6800, DXi 6900, DXi 7500, and DXi 8500 Deduplication Appliances, DXi V-Series (*e.g.* DXi V4000) virtual deduplication backup appliance, Q-Cloud Protect virtual deduplication appliance, Quantum GoProtect Software, and all versions and variations thereof since the issuance of the '506 patent ("Accused Instrumentality").

27. On information and belief, Quantum has directly infringed and continues to infringe the '506 patent, for example, through its own use and testing of the Accused Instrumentality to practice compression methods claimed by Claim 104 of the '506 patent, namely, a computer implemented method for compressing data, comprising: analyzing data within a data block of an input data stream to identify one or more data types of the data block, the input data stream comprising a plurality of disparate data types; performing content dependent data compression with a content dependent data compression encoder if a data type of the data block is identified;

and performing data compression with a single data compression encoder, if a data type of the data block is not identified, wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block. Upon information and belief, Quantum uses the Accused Instrumentality to practice infringing methods for its own internal non-testing business purposes, while testing the Accused Instrumentality, and while providing technical support, maintenance and repair services for the Accused Instrumentality to Quantum's customers.

28. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement "A computer implemented method for compressing data". This system minimizes the amount of data transmitted over a network and stored on a backup device. The Accused Instrumentality employs several data compression techniques to achieve this goal. *See, e.g.,* <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> ("Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set.").

29. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement "analyzing data within a data block of an input data stream to identify one or more data types of the data block, the input data stream comprising a plurality of disparate data types". Even if the determination of whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality were found not to literally meet the "analyzing data within a data block of an input data stream to identify one or more data types of the data block, the input data stream comprising a plurality of disparate data types" limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, determining whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality performs substantially the same function (for example, to provide the Accused

Instrumentality with some parameter of the data that can be used as a basis to select the optimal data compression method among multiple available data compression methods) in substantially the same way (by, for example, identifying some characteristic of the data, beyond a mere descriptor that is indicative of the data type of the data within the data block, that is relevant to selecting among multiple available data compression methods) to achieve substantially the same result (for example, enabling the Accused Instrumentality to select the optimal data compression method from among multiple available data compression methods). *See, e.g.,* <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times.”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-

file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

30. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “performing content dependent data compression with a content dependent data compression encoder if a data type of the data block is identified”. Even if the deduplication function in the Accused Instrumentality were found to not literally meet the “performing content dependent data compression with a content dependent data compression encoder if a data type of the data block is identified” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, deduplication performs substantially the same function (for example, reducing the overall amount of bits to store) in substantially the same way (by, for example, applying a technique based on the specific content of the incoming data in order to present for storage fewer overall bits) to achieve substantially the same result (for example, storage of fewer bits of data overall). *See, e.g.,* <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside

files created by different applications, and inside files created at different times.”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

31. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “performing data compression with a single data compression encoder, if a data type of the data block is not identified”. *See, e.g.*, <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi6500 systems use compression technology after duplicate blocks have been identified and replaced as part of the deduplication process. With compression, unique data that has been through the data deduplication process can be compressed at a typical ratio of approximately 2:1. This enables you to maximize the storage capacity of your system.”).

32. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “wherein the analyzing of the data within the data block to

identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block.” Even if the determination of whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality were found not to literally meet the “wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, determining whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality performs substantially the same function (for example, to provide the Accused Instrumentality with some parameter of the data that can be used as a basis to select the optimal data compression method among multiple available data compression methods) in substantially the same way (by, for example, identifying some characteristic of the data, beyond a mere descriptor that is indicative of the data type of the data within the data block, that is relevant to selecting among multiple available data compression methods) to achieve substantially the same result (for example, enabling the Accused Instrumentality to select the optimal data compression method from among multiple available data compression methods). *See, e.g.,* <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside

files created by different applications, and inside files created at different times.”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

33. On information and belief, Quantum also directly infringes and continues to infringe other claims of the ‘506 patent, for similar reasons as explained above with respect to Claim 104 of the ‘506 patent.

34. On information and belief, all of the Accused Instrumentalities perform the claimed methods in substantially the same way.

35. On information and belief, use of the Accused Instrumentality in its ordinary and customary fashion results in infringement of the methods claimed by the ‘506 patent.

36. On information and belief, Quantum has had knowledge of the ‘506 patent at least since the filing of this Complaint or shortly thereafter, and on information and belief, Quantum knew of the ‘506 patent and knew of its infringement, including by way of this lawsuit.

37. Upon information and belief, Quantum's affirmative acts of making, using, and selling the Accused Instrumentalities, and providing implementation services and technical support to users of the Accused Instrumentalities, have induced and continue to induce users of the Accused Instrumentalities to use them in their normal and customary way to infringe Claim 104 of the '506 patent by practicing a computer implemented method comprising: receiving a data block in an uncompressed form, said data block being included in a data stream; analyzing data within the data block to determine a type of said data block; and compressing said data block to provide a compressed data block, wherein if one or more encoders are associated to said type, compressing said data block with at least one of said one or more encoders, otherwise compressing said data block with a default data compression encoder, and wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block. For example, Quantum instructs users of DXi about the advantages of its deduplication and compression features. *See, e.g.,* <https://www.scribd.com/document/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 ("The DXi-Series disk backup and replication systems use Quantum's patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum's innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. ... The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network."). Thus, with knowledge of the '506 patent gained from at least the filing and service of the original Complaint in this action, Quantum encouraged users of the Accused Instrumentalities to use their

deduplication/compression functionality to infringe the '506 patent, knowing that such use constituted infringement of the '506 patent.

38. For similar reasons, Quantum also induces its customers to use the Accused Instrumentalities to infringe other claims of the '506 patent. Quantum specifically intended and was aware that these normal and customary activities would infringe the '506 patent. Quantum performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the '506 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, Quantum engaged in such inducement to promote the sales of the Accused Instrumentalities. Accordingly, Quantum has induced and continues to induce users of the Accused Instrumentalities to use the Accused Instrumentalities in their ordinary and customary way to infringe the '506 patent, knowing that such use constitutes infringement of the '506 patent.

39. By making, using, offering for sale, selling and/or importing into the United States the Accused Instrumentalities, and touting the benefits of using the Accused Instrumentalities' compression features, Quantum has injured Realtime and is liable to Realtime for infringement of the '506 patent pursuant to 35 U.S.C. § 271.

40. As a result of Quantum's infringement of the '506 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Quantum's infringement, but in no event less than a reasonable royalty for the use made of the invention by Quantum, together with interest and costs as fixed by the Court.

Quantum DXi Accent

41. On information and belief, Quantum has made, used, offered for sale, sold and/or imported into the United States Quantum products that infringe the '506 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, Quantum's compression products and services, such as, *e.g.*, Quantum DXi Accent, and all versions and variations thereof since the issuance of the '506 patent ("Accused Instrumentality").

42. On information and belief, Quantum has directly infringed and continues to infringe

the '506 patent, for example, through its own use and testing of the Accused Instrumentality to practice compression methods claimed by Claim 104 of the '506 patent, namely, a computer implemented method for compressing data, comprising: analyzing data within a data block of an input data stream to identify one or more data types of the data block, the input data stream comprising a plurality of disparate data types; performing content dependent data compression with a content dependent data compression encoder if a data type of the data block is identified; and performing data compression with a single data compression encoder, if a data type of the data block is not identified, wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block. Upon information and belief, Quantum uses the Accused Instrumentality to practice infringing methods for its own internal non-testing business purposes, while testing the Accused Instrumentality, and while providing technical support, maintenance and repair services for the Accused Instrumentality to Quantum's customers.

43. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement "A computer implemented method for compressing data". This system minimizes the amount of data transmitted over a network and stored on a backup device. The Accused Instrumentality employs several data compression techniques to achieve this goal. *See, e.g.,* <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 ("With DXi Accent, the backup server collaborates in the deduplication process by carrying out the initial deduplication phases, specifically: 1) Dividing the stream of data into variable-length blocks and computing the signature for each one, 2) Collaborating with the DXi to identify the new unique blocks, and 3) Compressing the new unique blocks and transmitting them to the DXi appliance for storage in the blockpool.").

44. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement "analyzing data within a data block of an input data stream to identify one or more data types of the data block, the input data stream comprising a plurality of disparate data types". Even if the determination of whether particular data within a data block of

an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality were found not to literally meet the “analyzing data within a data block of an input data stream to identify one or more data types of the data block, the input data stream comprising a plurality of disparate data types” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, determining whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality performs substantially the same function (for example, to provide the Accused Instrumentality with some parameter of the data that can be used as a basis to select the optimal data compression method among multiple available data compression methods) in substantially the same way (by, for example, identifying some characteristic of the data, beyond a mere descriptor that is indicative of the data type of the data within the data block, that is relevant to selecting among multiple available data compression methods) to achieve substantially the same result (for example, enabling the Accused Instrumentality to select the optimal data compression method from among multiple available data compression methods). *See, e.g.,* <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“In order to determine the unique blocks, the signatures for all the blocks are sent by the server to the DXi appliance. The DXi compares the signatures to its central index and returns to the backup server a list of signatures for the unique blocks not already present in the blockpool. ... For blocks already present in the blockpool, the DXi simply stores a pointer to the existing block.”).

45. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “performing content dependent data compression with a content dependent data compression encoder if a data type of the data block is identified”. Even if the deduplication function in the Accused Instrumentality were found to not literally meet the “performing content dependent data compression with a content dependent data compression encoder if a data type of the data block is identified” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally

requires. Moreover, deduplication performs substantially the same function (for example, reducing the overall amount of bits to store) in substantially the same way (by, for example, applying a technique based on the specific content of the incoming data in order to present for storage fewer overall bits) to achieve substantially the same result (for example, storage of fewer bits of data overall). *See, e.g.*, <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“In order to determine the unique blocks, the signatures for all the blocks are sent by the server to the DXi appliance. The DXi compares the signatures to its central index and returns to the backup server a list of signatures for the unique blocks not already present in the blockpool. ... For blocks already present in the blockpool, the DXi simply stores a pointer to the existing block.”).

46. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “performing data compression with a single data compression encoder, if a data type of the data block is not identified”. *See, e.g.*, <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“In order to determine the unique blocks, the signatures for all the blocks are sent by the server to the DXi appliance. The DXi compares the signatures to its central index and returns to the backup server a list of signatures for the unique blocks not already present in the blockpool. The backup server compresses these blocks and transmits them to the DXi to be stored.”).

47. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block.” Even if the determination of whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality were found not to literally meet the “wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block” limitation, this limitation is met under the doctrine of equivalents because it is

insubstantially different from what the limitation literally requires. Moreover, determining whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality performs substantially the same function (for example, to provide the Accused Instrumentality with some parameter of the data that can be used as a basis to select the optimal data compression method among multiple available data compression methods) in substantially the same way (by, for example, identifying some characteristic of the data, beyond a mere descriptor that is indicative of the data type of the data within the data block, that is relevant to selecting among multiple available data compression methods) to achieve substantially the same result (for example, enabling the Accused Instrumentality to select the optimal data compression method from among multiple available data compression methods).

See, e.g., <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“In order to determine the unique blocks, the signatures for all the blocks are sent by the server to the DXi appliance. The DXi compares the signatures to its central index and returns to the backup server a list of signatures for the unique blocks not already present in the blockpool. ... For blocks already present in the blockpool, the DXi simply stores a pointer to the existing block.”).

48. On information and belief, Quantum also directly infringes and continues to infringe other claims of the ‘506 patent, for similar reasons as explained above with respect to Claim 104 of the ‘506 patent.

49. On information and belief, all of the Accused Instrumentalities perform the claimed methods in substantially the same way.

50. On information and belief, use of the Accused Instrumentality in its ordinary and customary fashion results in infringement of the methods claimed by the ‘506 patent.

51. On information and belief, Quantum has had knowledge of the ‘506 patent at least since the filing of this Complaint or shortly thereafter, and on information and belief, Quantum knew of the ‘506 patent and knew of its infringement, including by way of this lawsuit.

52. Upon information and belief, Quantum’s affirmative acts of making, using, and

selling the Accused Instrumentalities, and providing implementation services and technical support to users of the Accused Instrumentalities, have induced and continue to induce users of the Accused Instrumentalities to use them in their normal and customary way to infringe Claim 104 of the '506 patent by practicing a computer implemented method comprising: receiving a data block in an uncompressed form, said data block being included in a data stream; analyzing data within the data block to determine a type of said data block; and compressing said data block to provide a compressed data block, wherein if one or more encoders are associated to said type, compressing said data block with at least one of said one or more encoders, otherwise compressing said data block with a default data compression encoder, and wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block. For example, Quantum instructs users of DXi Accent about the advantages of its deduplication and compression features. *See, e.g.*, <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“DXi Accent is software from Quantum that enables a hybrid or collaborative approach to deduplication, combining the best features of both target and source-based systems. DXi Accent uses variable-length deduplication for the most effective data reduction, and it takes advantage of purpose-built DXi appliances for scalability, performance, and ease of integration, but it moves a portion of the deduplication process to the backup server so that only unique blocks are transmitted to the target appliance. This system, which leverages much of the underlying functionality of the DXi replication, allows DXi Accent to accelerate backups where network bandwidth is the limiting factor while limiting the impact on the backup server and maintaining DXi features that integrate deduplication effectively into the larger data protection environment. ... For example, for a backup where 10% of the blocks are new, the potential effective transmission rate will be approximately 10 times more than when using a target-based approach alone. ... This division of tasks between the backup server and DXi maximizes end-to-end performance while minimizing loading effects on the backup server because it leaves most of the processor-intensive tasks on the appliance ... As a result, the backup server requirements for DXi Accent are significantly lower than for

traditional source-based architectures, and much more data can be protected with the same resources.”). Thus, with knowledge of the ‘506 patent gained from at least the filing and service of the original Complaint in this action, Quantum encouraged users of the Accused Instrumentalities to use their deduplication/compression functionality to infringe the ‘506 patent, knowing that such use constituted infringement of the ‘506 patent.

53. For similar reasons, Quantum also induces its customers to use the Accused Instrumentalities to infringe other claims of the ‘506 patent. Quantum specifically intended and was aware that these normal and customary activities would infringe the ‘506 patent. Quantum performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the ‘506 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, Quantum engaged in such inducement to promote the sales of the Accused Instrumentalities. Accordingly, Quantum has induced and continues to induce users of the Accused Instrumentalities to use the Accused Instrumentalities in their ordinary and customary way to infringe the ‘506 patent, knowing that such use constitutes infringement of the ‘506 patent.

54. By making, using, offering for sale, selling and/or importing into the United States the Accused Instrumentalities, and touting the benefits of using the Accused Instrumentalities’ compression features, Quantum has injured Realtime and is liable to Realtime for infringement of the ‘506 patent pursuant to 35 U.S.C. § 271.

55. As a result of Quantum’s infringement of the ‘506 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Quantum’s infringement, but in no event less than a reasonable royalty for the use made of the invention by Quantum, together with interest and costs as fixed by the Court.

COUNT II

INFRINGEMENT OF U.S. PATENT NO. 9,054,728

56. Plaintiff Realtime realleges and incorporates by reference paragraphs 1-55 above, as if fully set forth herein.

57. Plaintiff Realtime is the owner by assignment of United States Patent No. 9,054,728 (“the ‘728 Patent”) entitled “Data compression systems and methods.” The ‘728 Patent was duly and legally issued by the United States Patent and Trademark Office on June 9, 2015. A true and correct copy of the ‘728 Patent is included as Exhibit B.

Fujitsu Eternus Data Protection Appliance

58. On information and belief, Fujitsu has made, used, offered for sale, sold and/or imported into the United States Fujitsu products that infringe the ‘728 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, Fujitsu’s compression products and services, such as, *e.g.*, the Fujitsu Eternus CS 800, Eternus CS 8000, Eternus CS HE, Eternus CS 200c, Eternus DX, and Eternus LT Data Protection Appliances and all versions and variations thereof since the issuance of the ‘728 patent (“Accused Instrumentality”).

59. On information and belief, Fujitsu has directly infringed and continues to infringe the ‘728 patent, for example, through its own use and testing of the Accused Instrumentality, which constitute systems for compressing data claimed by Claim 1 of the ‘728 patent, comprising a processor; one or more content dependent data compression encoders; and a single data compression encoder; wherein the processor is configured: to analyze data within a data block to identify one or more parameters or attributes of the data wherein the analyzing of the data within the data block to identify the one or more parameters or attributes of the data excludes analyzing based solely on a descriptor that is indicative of the one or more parameters or attributes of the data within the data block; to perform content dependent data compression with the one or more content dependent data compression encoders if the one or more parameters or attributes of the data are identified; and to perform data compression with the single data compression encoder, if the one or more parameters or attributes of the data are not identified. Upon information and belief, NetApp uses the Accused Instrumentality, an infringing system, for its own internal non-testing business purposes, while testing the Accused Instrumentality, and while providing technical support for the Accused Instrumentality to Fujitsu’s customers.

60. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “A system for compressing data comprising; a processor; one or more content dependent data compression encoders”. Even if the deduplication function in the Accused Instrumentality were found to not literally meet the “one or more content dependent data compression encoders” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, deduplication performs substantially the same function (for example, reducing the overall amount of bits to store) in substantially the same way (by, for example, applying a technique based on the specific content of the incoming data in order to present for storage fewer overall bits) to achieve substantially the same result (for example, storage of fewer bits of data overall). *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most mature on the market. It’s a great piece of software.’”); <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times.”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series

solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum's innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”)

61. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “a single data compression encoder.” *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most mature on the market. It’s a great piece of software.’”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi6500 systems use compression technology after duplicate blocks have been identified and replaced as part of the deduplication process. With compression, unique data that has been through the data deduplication process can be compressed at a typical ratio of approximately 2:1. This enables you to maximize the storage capacity of your system.”).

62. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “wherein the processor is configured: to analyze data within a data block to identify one or more parameters or attributes of the data wherein the analyzing of the

data within the data block to identify the one or more parameters or attributes of the data excludes analyzing based solely on a descriptor that is indicative of the one or more parameters or attributes of the data within the data block”. *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most mature on the market. It’s a great piece of software.’”); <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times.”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-

file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

63. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “to perform content dependent data compression with the one or more content dependent data compression encoders if the one or more parameters or attributes of the data are identified”. Even if the deduplication function in the Accused Instrumentality were found to not literally meet the “to perform content dependent data compression with the one or more content dependent data compression encoders if the one or more parameters or attributes of the data are identified” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, deduplication performs substantially the same function (for example, reducing the overall amount of bits to store) in substantially the same way (by, for example, applying a technique based on the specific content of the incoming data in order to present for storage fewer overall bits) to achieve substantially the same result (for example, storage of fewer bits of data overall). *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most mature on the market. It’s a great piece of software.’”); <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find

the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times.”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

64. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “to perform data compression with the single data compression encoder, if the one or more parameters or attributes of the data are not identified”. *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most

mature on the market. It's a great piece of software.'"); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 ("The DXi6500 systems use compression technology after duplicate blocks have been identified and replaced as part of the deduplication process. With compression, unique data that has been through the data deduplication process can be compressed at a typical ratio of approximately 2:1. This enables you to maximize the storage capacity of your system.").

65. On information and belief, Fujitsu also directly infringes and continues to infringe other claims of the '728 patent, for similar reasons as explained above with respect to Claim 1 of the '728 patent.

66. On information and belief, all of the Accused Instrumentalities operate in substantially the same way.

67. On information and belief, use of the Accused Instrumentality in its ordinary and customary fashion results in infringement of the systems claimed by the '728 patent.

68. On information and belief, Fujitsu has had knowledge of the '728 patent since at least the filing of the original Complaint or shortly thereafter, and on information and belief, Fujitsu knew of the '728 patent and knew of its infringement, including by way of this lawsuit.

69. Upon information and belief, Fujitsu's affirmative acts of making, using, and selling the Accused Instrumentalities, and providing implementation services and technical support to users of the Accused Instrumentalities, have induced and continue to induce users of the Accused Instrumentalities to use them in their normal and customary way to infringe the '728 patent by making or using a system for compressing data comprising a processor; one or more content dependent data compression encoders; and a single data compression encoder; wherein the processor is configured: to analyze data within a data block to identify one or more parameters or attributes of the data wherein the analyzing of the data within the data block to identify the one or more parameters or attributes of the data excludes analyzing based solely on a descriptor that is indicative of the one or more parameters or attributes of the data within the data block; to perform content dependent data compression with the one or more content dependent data compression

encoders if the one or more parameters or attributes of the data are identified; and to perform data compression with the single data compression encoder, if the one or more parameters or attributes of the data are not identified. For example, Fujitsu instructs users of the Fujitsu CS800 Data Protection Appliance about the advantages of its deduplication and compression features. *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most mature on the market. It’s a great piece of software.’”); https://www.fujitsu.com/global/Images/wp-eternus-cs8000-technical-concepts-ww-en_FJJ.pdf at 4 (“ETERNUS CS800 is a data protection appliance optimized for environments where IT-organizations want replace backup to traditional tape by backup to disk. Utilizing leading deduplication and compression technology, the disk capacity requirements can be reduced by up to 95%. ... Data deduplication technology reduces disk capacity requirements such enabling large cost savings.”). Thus, with knowledge of the ‘728 patent gained from at least the filing and service of the original Complaint in this action, Fujitsu encouraged users of the Accused Instrumentalities to use their deduplication/compression functionality to infringe the ‘728 patent, knowing that such use constituted infringement of the ‘728 patent.

70. For similar reasons, Fujitsu also induces its customers to use the Accused Instrumentalities to infringe other claims of the ‘728 patent. Fujitsu specifically intended and was aware that these normal and customary activities would infringe the ‘728 patent. Fujitsu performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the ‘728 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, Fujitsu engaged in such inducement to promote the sales of the Accused Instrumentalities. Accordingly, Fujitsu has induced and continues to induce users of the Accused Instrumentalities to use the Accused Instrumentalities in their ordinary and customary way to infringe the ‘728 patent, knowing that such use constitutes infringement of the ‘728 patent.

71. By making, using, offering for sale, selling and/or importing into the United States the Accused Instrumentalities, and touting the benefits of using the Accused Instrumentalities' compression features, Fujitsu has injured Realtime and is liable to Realtime for infringement of the '728 patent pursuant to 35 U.S.C. § 271.

72. As a result of Fujitsu's infringement of the '728 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Fujitsu's infringement, but in no event less than a reasonable royalty for the use made of the invention by Fujitsu, together with interest and costs as fixed by the Court.

Quantum DXi

73. On information and belief, Quantum has made, used, offered for sale, sold and/or imported into the United States Quantum products that infringe the '728 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, Quantum's compression products and services, such as, *e.g.*, Quantum's DXi software (*e.g.*, powered by Quantum StorNext high-performance file system) (including as incorporated into third-party products such as the Fujitsu Eternus CS800 Data Protection Appliance), DXi 2500, DXi 3500, DXi 4500, DXi 4700 (*e.g.* DXi 4701), DXi 6500 (*e.g.* DXi 6510, DXi 6520, DXi 6530, DXi 6540, DXi 6550), DXi 6800, DXi 6900, DXi 7500, and DXi 8500 Deduplication Appliances, DXi V-Series (*e.g.* DXi V4000) virtual deduplication backup appliance, Q-Cloud Protect virtual deduplication appliance, Quantum GoProtect Software, and all versions and variations thereof since the issuance of the '728 patent ("Accused Instrumentality").

74. On information and belief, Quantum has directly infringed and continues to infringe the '728 patent, for example, through its own use and testing of the Accused Instrumentality, which constitute systems for compressing data claimed by Claim 1 of the '728 patent, comprising a processor; one or more content dependent data compression encoders; and a single data compression encoder; wherein the processor is configured: to analyze data within a data block to identify one or more parameters or attributes of the data wherein the analyzing of the data within the data block to identify the one or more parameters or attributes of the data excludes analyzing

based solely on a descriptor that is indicative of the one or more parameters or attributes of the data within the data block; to perform content dependent data compression with the one or more content dependent data compression encoders if the one or more parameters or attributes of the data are identified; and to perform data compression with the single data compression encoder, if the one or more parameters or attributes of the data are not identified. Upon information and belief, NetApp uses the Accused Instrumentality, an infringing system, for its own internal non-testing business purposes, while testing the Accused Instrumentality, and while providing technical support for the Accused Instrumentality to Quantum's customers.

75. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, "A system for compressing data comprising; a processor; one or more content dependent data compression encoders". Even if the deduplication function in the Accused Instrumentality were found to not literally meet the "one or more content dependent data compression encoders" limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, deduplication performs substantially the same function (for example, reducing the overall amount of bits to store) in substantially the same way (by, for example, applying a technique based on the specific content of the incoming data in order to present for storage fewer overall bits) to achieve substantially the same result (for example, storage of fewer bits of data overall). *See, e.g.,* <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> ("Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum's deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to "float" within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside

files created by different applications, and inside files created at different times.”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”)

76. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “a single data compression encoder.” *See, e.g.*, <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi6500 systems use compression technology after duplicate blocks have been identified and replaced as part of the deduplication process. With compression, unique data that has been through the data deduplication process can be compressed at a typical ratio of approximately 2:1. This enables you to maximize the storage capacity of your system.”).

77. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “wherein the processor is configured: to analyze data within a data block to identify one or more parameters or attributes of the data wherein the analyzing of the

data within the data block to identify the one or more parameters or attributes of the data excludes analyzing based solely on a descriptor that is indicative of the one or more parameters or attributes of the data within the data block”. *See, e.g.,* <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times.”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in

the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

78. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “to perform content dependent data compression with the one or more content dependent data compression encoders if the one or more parameters or attributes of the data are identified”. Even if the deduplication function in the Accused Instrumentality were found to not literally meet the “to perform content dependent data compression with the one or more content dependent data compression encoders if the one or more parameters or attributes of the data are identified” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, deduplication performs substantially the same function (for example, reducing the overall amount of bits to store) in substantially the same way (by, for example, applying a technique based on the specific content of the incoming data in order to present for storage fewer overall bits) to achieve substantially the same result (for example, storage of fewer bits of data overall). *See, e.g.,* <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times.”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series

solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum's innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

79. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “to perform data compression with the single data compression encoder, if the one or more parameters or attributes of the data are not identified”. *See, e.g.,* <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi6500 systems use compression technology after duplicate blocks have been identified and replaced as part of the deduplication process. With compression, unique data that has been through the data deduplication process can be compressed at a typical ratio of approximately 2:1. This enables you to maximize the storage capacity of your system.”).

80. On information and belief, Quantum also directly infringes and continues to infringe other claims of the ‘728 patent, for similar reasons as explained above with respect to Claim 1 of the ‘728 patent.

81. On information and belief, all of the Accused Instrumentalities operate in substantially the same way.

82. On information and belief, use of the Accused Instrumentality in its ordinary and

customary fashion results in infringement of the systems claimed by the '728 patent.

83. On information and belief, Quantum has had knowledge of the '728 patent since at least the filing of the original Complaint or shortly thereafter, and on information and belief, Quantum knew of the '728 patent and knew of its infringement, including by way of this lawsuit.

84. Upon information and belief, Quantum's affirmative acts of making, using, and selling the Accused Instrumentalities, and providing implementation services and technical support to users of the Accused Instrumentalities, have induced and continue to induce users of the Accused Instrumentalities to use them in their normal and customary way to infringe the '728 patent by making or using a system for compressing data comprising a processor; one or more content dependent data compression encoders; and a single data compression encoder; wherein the processor is configured: to analyze data within a data block to identify one or more parameters or attributes of the data wherein the analyzing of the data within the data block to identify the one or more parameters or attributes of the data excludes analyzing based solely on a descriptor that is indicative of the one or more parameters or attributes of the data within the data block; to perform content dependent data compression with the one or more content dependent data compression encoders if the one or more parameters or attributes of the data are identified; and to perform data compression with the single data compression encoder, if the one or more parameters or attributes of the data are not identified. For example, Quantum instructs users of DXi about the advantages of its deduplication and compression features. *See, e.g.,* <https://www.scribd.com/document/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 ("The DXi-Series disk backup and replication systems use Quantum's patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum's innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline

data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. ... The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”). Thus, with knowledge of the ‘728 patent gained from at least the filing and service of the original Complaint in this action, Quantum encouraged users of the Accused Instrumentalities to use their deduplication/compression functionality to infringe the ‘728 patent, knowing that such use constituted infringement of the ‘728 patent.

85. For similar reasons, Quantum also induces its customers to use the Accused Instrumentalities to infringe other claims of the ‘728 patent. Quantum specifically intended and was aware that these normal and customary activities would infringe the ‘728 patent. Quantum performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the ‘728 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, Quantum engaged in such inducement to promote the sales of the Accused Instrumentalities. Accordingly, Quantum has induced and continues to induce users of the Accused Instrumentalities to use the Accused Instrumentalities in their ordinary and customary way to infringe the ‘728 patent, knowing that such use constitutes infringement of the ‘728 patent.

86. By making, using, offering for sale, selling and/or importing into the United States the Accused Instrumentalities, and touting the benefits of using the Accused Instrumentalities’ compression features, Quantum has injured Realtime and is liable to Realtime for infringement of the ‘728 patent pursuant to 35 U.S.C. § 271.

87. As a result of Quantum’s infringement of the ‘728 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Quantum’s infringement, but in no event less than a reasonable royalty for the use made of the invention by Quantum, together with interest and costs as fixed by the Court.

Quantum DXi Accent

88. On information and belief, Quantum has made, used, offered for sale, sold and/or imported into the United States Quantum products that infringe the '728 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, Quantum's compression products and services, such as, *e.g.*, Quantum's DXi Accent, and all versions and variations thereof since the issuance of the '728 patent ("Accused Instrumentality").

89. On information and belief, Quantum has directly infringed and continues to infringe the '728 patent, for example, through its own use and testing of the Accused Instrumentality, which constitute systems for compressing data claimed by Claim 1 of the '728 patent, comprising a processor; one or more content dependent data compression encoders; and a single data compression encoder; wherein the processor is configured: to analyze data within a data block to identify one or more parameters or attributes of the data wherein the analyzing of the data within the data block to identify the one or more parameters or attributes of the data excludes analyzing based solely on a descriptor that is indicative of the one or more parameters or attributes of the data within the data block; to perform content dependent data compression with the one or more content dependent data compression encoders if the one or more parameters or attributes of the data are identified; and to perform data compression with the single data compression encoder, if the one or more parameters or attributes of the data are not identified. Upon information and belief, NetApp uses the Accused Instrumentality, an infringing system, for its own internal non-testing business purposes, while testing the Accused Instrumentality, and while providing technical support for the Accused Instrumentality to Quantum's customers.

90. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, "A system for compressing data comprising; a processor; one or more content dependent data compression encoders". Even if the deduplication function in the Accused Instrumentality were found to not literally meet the "one or more content dependent data compression encoders" limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, deduplication performs substantially the same function (for example, reducing the overall amount of bits to store)

in substantially the same way (by, for example, applying a technique based on the specific content of the incoming data in order to present for storage fewer overall bits) to achieve substantially the same result (for example, storage of fewer bits of data overall). *See, e.g.,* <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“With DXi Accent, the backup server collaborates in the deduplication process by carrying out the initial deduplication phases, specifically: 1) Dividing the stream of data into variable-length blocks and computing the signature for each one, 2) Collaborating with the DXi to identify the new unique blocks, and 3) Compressing the new unique blocks and transmitting them to the DXi appliance for storage in the blockpool. In order to determine the unique blocks, the signatures for all the blocks are sent by the server to the DXi appliance. The DXi compares the signatures to its central index and returns to the backup server a list of signatures for the unique blocks not already present in the blockpool. ... For blocks already present in the blockpool, the DXi simply stores a pointer to the existing block.”).

91. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “a single data compression encoder.” *See, e.g.,* <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“In order to determine the unique blocks, the signatures for all the blocks are sent by the server to the DXi appliance. The DXi compares the signatures to its central index and returns to the backup server a list of signatures for the unique blocks not already present in the blockpool. The backup server compresses these blocks and transmits them to the DXi to be stored.”).

92. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “wherein the processor is configured: to analyze data within a data block to identify one or more parameters or attributes of the data wherein the analyzing of the data within the data block to identify the one or more parameters or attributes of the data excludes analyzing based solely on a descriptor that is indicative of the one or more parameters or attributes of the data within the data block”. *See, e.g.,* <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“In order to determine

the unique blocks, the signatures for all the blocks are sent by the server to the DXi appliance. The DXi compares the signatures to its central index and returns to the backup server a list of signatures for the unique blocks not already present in the blockpool. ... For blocks already present in the blockpool, the DXi simply stores a pointer to the existing block.”).

93. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “to perform content dependent data compression with the one or more content dependent data compression encoders if the one or more parameters or attributes of the data are identified”. Even if the deduplication function in the Accused Instrumentality were found to not literally meet the “to perform content dependent data compression with the one or more content dependent data compression encoders if the one or more parameters or attributes of the data are identified” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, deduplication performs substantially the same function (for example, reducing the overall amount of bits to store) in substantially the same way (by, for example, applying a technique based on the specific content of the incoming data in order to present for storage fewer overall bits) to achieve substantially the same result (for example, storage of fewer bits of data overall). *See, e.g.,* <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“With DXi Accent, the backup server collaborates in the deduplication process by carrying out the initial deduplication phases, specifically: 1) Dividing the stream of data into variable-length blocks and computing the signature for each one, 2) Collaborating with the DXi to identify the new unique blocks, and 3) Compressing the new unique blocks and transmitting them to the DXi appliance for storage in the blockpool. In order to determine the unique blocks, the signatures for all the blocks are sent by the server to the DXi appliance. The DXi compares the signatures to its central index and returns to the backup server a list of signatures for the unique blocks not already present in the blockpool. ... For blocks already present in the blockpool, the DXi simply stores a pointer to the existing block.”).

94. The Accused Instrumentality satisfies literally and/or under the doctrine of

equivalents the claim requirement “to perform data compression with the single data compression encoder, if the one or more parameters or attributes of the data are not identified”. *See, e.g.,* <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“In order to determine the unique blocks, the signatures for all the blocks are sent by the server to the DXi appliance. The DXi compares the signatures to its central index and returns to the backup server a list of signatures for the unique blocks not already present in the blockpool. The backup server compresses these blocks and transmits them to the DXi to be stored.”).

95. On information and belief, Quantum also directly infringes and continues to infringe other claims of the ‘728 patent, for similar reasons as explained above with respect to Claim 1 of the ‘728 patent.

96. On information and belief, all of the Accused Instrumentalities operate in substantially the same way.

97. On information and belief, use of the Accused Instrumentality in its ordinary and customary fashion results in infringement of the systems claimed by the ‘728 patent.

98. On information and belief, Quantum has had knowledge of the ‘728 patent since at least the filing of the original Complaint or shortly thereafter, and on information and belief, Quantum knew of the ‘728 patent and knew of its infringement, including by way of this lawsuit.

99. Upon information and belief, Quantum’s affirmative acts of making, using, and selling the Accused Instrumentalities, and providing implementation services and technical support to users of the Accused Instrumentalities, have induced and continue to induce users of the Accused Instrumentalities to use them in their normal and customary way to infringe the ‘728 patent by making or using a system for compressing data comprising a processor; one or more content dependent data compression encoders; and a single data compression encoder; wherein the processor is configured: to analyze data within a data block to identify one or more parameters or attributes of the data wherein the analyzing of the data within the data block to identify the one or more parameters or attributes of the data excludes analyzing based solely on a descriptor that is indicative of the one or more parameters or attributes of the data within the data block; to perform

content dependent data compression with the one or more content dependent data compression encoders if the one or more parameters or attributes of the data are identified; and to perform data compression with the single data compression encoder, if the one or more parameters or attributes of the data are not identified. For example, Quantum instructs users of DXi Accent about the advantages of its deduplication and compression features. *See, e.g.,* <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“DXi Accent is software from Quantum that enables a hybrid or collaborative approach to deduplication, combining the best features of both target and source-based systems. DXi Accent uses variable-length deduplication for the most effective data reduction, and it takes advantage of purpose-built DXi appliances for scalability, performance, and ease of integration, but it moves a portion of the deduplication process to the backup server so that only unique blocks are transmitted to the target appliance. This system, which leverages much of the underlying functionality of the DXi replication, allows DXi Accent to accelerate backups where network bandwidth is the limiting factor while limiting the impact on the backup server and maintaining DXi features that integrate deduplication effectively into the larger data protection environment. ... For example, for a backup where 10% of the blocks are new, the potential effective transmission rate will be approximately 10 times more than when using a target-based approach alone. ... This division of tasks between the backup server and DXi maximizes end-to-end performance while minimizing loading effects on the backup server because it leaves most of the processor-intensive tasks on the appliance ... As a result, the backup server requirements for DXi Accent are significantly lower than for traditional source-based architectures, and much more data can be protected with the same resources.”). Thus, with knowledge of the ‘728 patent gained from at least the filing and service of the original Complaint in this action, Quantum encouraged users of the Accused Instrumentalities to use their deduplication/compression functionality to infringe the ‘728 patent, knowing that such use constituted infringement of the ‘728 patent.

100. For similar reasons, Quantum also induces its customers to use the Accused Instrumentalities to infringe other claims of the ‘728 patent. Quantum specifically intended and

was aware that these normal and customary activities would infringe the '728 patent. Quantum performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the '728 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, Quantum engaged in such inducement to promote the sales of the Accused Instrumentalities. Accordingly, Quantum has induced and continues to induce users of the Accused Instrumentalities to use the Accused Instrumentalities in their ordinary and customary way to infringe the '728 patent, knowing that such use constitutes infringement of the '728 patent.

101. By making, using, offering for sale, selling and/or importing into the United States the Accused Instrumentalities, and touting the benefits of using the Accused Instrumentalities' compression features, Quantum has injured Realtime and is liable to Realtime for infringement of the '728 patent pursuant to 35 U.S.C. § 271.

102. As a result of Quantum's infringement of the '728 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Quantum's infringement, but in no event less than a reasonable royalty for the use made of the invention by Quantum, together with interest and costs as fixed by the Court.

COUNT III

INFRINGEMENT OF U.S. PATENT NO. 7,378,992

103. Plaintiff realleges and incorporates by reference paragraphs 1-102 above, as if fully set forth herein.

104. Plaintiff Realtime is the owner by assignment of United States Patent No. 7,378,992 ("the '992 patent") entitled "Content independent data compression method and system." The '992 patent was duly and legally issued by the United States Patent and Trademark Office on May 27, 2008. A true and correct copy of the '992 patent, including its reexamination certificates, is included as Exhibit C.

Fujitsu Eternus Data Protection Appliance

105. On information and belief, Fujitsu has made, used, offered for sale, sold and/or

imported into the United States Fujitsu products that infringe the '992 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, Fujitsu's compression products and services, such as, *e.g.*, the Fujitsu Eternus CS 800, Eternus CS 8000, Eternus CS HE, Eternus CS 200c, Eternus DX, and Eternus LT Data Protection Appliances and all versions and variations thereof since the issuance of the '992 patent ("Accused Instrumentality").

106. On information and belief, Fujitsu has directly infringed and continues to infringe at least claim 48 of the '992 patent, for example, through its own use and testing of the Accused Instrumentalities to practice compression methods claimed by the '992 patent, including a computer implemented method comprising: receiving a data block; associating at least one encoder to each one of several data types; analyzing data within the data block to identify a first data type of the data within the data block; compressing if said first data type is the same as one of said several data types, said data block with said at least one encoder associated with said one of said several data types that is the same as said first data type to provide a compressed data block; and compressing, if said first data type is not the same as one of said several data types, said data block with a default encoder to provide said compressed data block, wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block. Upon information and belief, Fujitsu uses the Accused Instrumentality to practice infringing methods for its own internal non-testing business purposes, while testing the Accused Instrumentality, and while providing technical support for the Accused Instrumentality to Fujitsu's customers.

107. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, "a computer implemented method comprising: receiving a data block". *See, e.g.*, http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ ("But inside the CS800 S2 is Quantum's DXi deduplication software technology. Marcus Schneider, Fujitsu's director of storage product marketing, admitted this. He said: 'We believe the Quantum stack is the most mature on the market. It's a great piece of software.'");

<https://www.scribd.com/document/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd>

at 4 (“The new, inline data flow enabled by the DXi 2.0 Software deduplicates data as it is ingested into the DXi appliance. Optimized for the new generation of purpose-built DXi hardware platforms, it provides enhanced performance and more efficient dynamic use of system resources”).

108. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “associating at least one encoder to each one of several data types.” Even if the determination of whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality were found not to literally meet the “associating at least one encoder to each one of several data types” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, determining whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality performs substantially the same function (for example, to provide the Accused Instrumentality with some parameter of the data that can be used as a basis to select the optimal data compression method among multiple available data compression methods) in substantially the same way (by, for example, identifying some characteristic of the data, beyond a mere descriptor that is indicative of the data type of the data within the data block, that is relevant to selecting among multiple available data compression methods) to achieve substantially the same result (for example, enabling the Accused Instrumentality to select the optimal data compression method from among multiple available data compression methods). *See, e.g.,*

http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most mature on the market. It’s a great piece of software.’”);

<http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication

used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum's deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to "float" within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times."); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 ("The DXi-Series disk backup and replication systems use Quantum's patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum's innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.").

109. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, "analyzing data within the data block to identify a first data

type of the data within the data block”. Even if the determination of whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality were found not to literally meet the “analyzing data within the data block to identify a first data type of the data within the data block” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, determining whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality performs substantially the same function (for example, to provide the Accused Instrumentality with some parameter of the data that can be used as a basis to select the optimal data compression method among multiple available data compression methods) in substantially the same way (by, for example, identifying some characteristic of the data, beyond a mere descriptor that is indicative of the data type of the data within the data block, that is relevant to selecting among multiple available data compression methods) to achieve substantially the same result (for example, enabling the Accused Instrumentality to select the optimal data compression method from among multiple available data compression methods). *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most mature on the market. It’s a great piece of software.’”); <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method,

duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times.”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

110. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “compressing if said first data type is the same as one of said several data types, said data block with said at least one encoder associated with said one of said several data types that is the same as said first data type to provide a compressed data block”. Even if the determination of whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality were found not to literally meet the “compressing if said first data type is the same as one of said several data types, said data block with said at least one encoder associated with said one of said several data types that is the same as said first data type to provide a compressed data

block” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, determining whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality performs substantially the same function (for example, to provide the Accused Instrumentality with some parameter of the data that can be used as a basis to select the optimal data compression method among multiple available data compression methods) in substantially the same way (by, for example, identifying some characteristic of the data, beyond a mere descriptor that is indicative of the data type of the data within the data block, that is relevant to selecting among multiple available data compression methods) to achieve substantially the same result (for example, enabling the Accused Instrumentality to select the optimal data compression method from among multiple available data compression methods).

See, e.g.,

http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most mature on the market. It’s a great piece of software.’”);

<http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times.”);

<http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5

(“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

111. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “compressing, if said first data type is not the same as one of said several data types, said data block with a default encoder to provide said compressed data block, wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block.” Even if the determination of whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality were found not to literally meet the “compressing, if said first data type is not the same as one of said several data types, said data block with a default encoder to provide said compressed data block, wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block” limitation, this limitation is met under the doctrine of equivalents

because it is insubstantially different from what the limitation literally requires. Moreover, determining whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality performs substantially the same function (for example, to provide the Accused Instrumentality with some parameter of the data that can be used as a basis to select the optimal data compression method among multiple available data compression methods) in substantially the same way (by, for example, identifying some characteristic of the data, beyond a mere descriptor that is indicative of the data type of the data within the data block, that is relevant to selecting among multiple available data compression methods) to achieve substantially the same result (for example, enabling the Accused Instrumentality to select the optimal data compression method from among multiple available data compression methods). *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most mature on the market. It’s a great piece of software.’”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi6500 systems use compression technology after duplicate blocks have been identified and replaced as part of the deduplication process. With compression, unique data that has been through the data deduplication process can be compressed at a typical ratio of approximately 2:1. This enables you to maximize the storage capacity of your system.”); <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have

little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times.”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

112. On information and belief, Fujitsu also directly infringes and continues to infringe other claims of the ‘992 patent, for similar reasons as explained above with respect to Claim 48 of the ‘992 patent.

113. On information and belief, all of the Accused Instrumentalities perform the claimed methods in substantially the same way.

114. On information and belief, use of the Accused Instrumentality in its ordinary and customary fashion results in infringement of the methods claimed by the ‘992 patent.

115. On information and belief, Fujitsu has had knowledge of the ‘992 patent since at

least the filing of this Complaint or shortly thereafter, and on information and belief, Fujitsu knew of the '992 patent and knew of its infringement, including by way of this lawsuit.

116. Fujitsu's affirmative acts of making, using, selling, offering for sale, and/or importing the Accused Instrumentalities have induced and continue to induce users of the Accused Instrumentalities to use the Accused Instrumentalities in their normal and customary way to infringe the '992 patent by practicing compression methods claimed by the '992 patent, including a computer implemented method comprising: receiving a data block; associating at least one encoder to each one of several data types; analyzing data within the data block to identify a first data type of the data within the data block; compressing if said first data type is the same as one of said several data types, said data block with said at least one encoder associated with said one of said several data types that is the same as said first data type to provide a compressed data block; and compressing, if said first data type is not the same as one of said several data types, said data block with a default encoder to provide said compressed data block, wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block. For example, Fujitsu instructs users of the Fujitsu CS800 Data Protection Appliance about the advantages of its deduplication and compression features. *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ ("But inside the CS800 S2 is Quantum's DXi deduplication software technology. Marcus Schneider, Fujitsu's director of storage product marketing, admitted this. He said: 'We believe the Quantum stack is the most mature on the market. It's a great piece of software.'"); https://www.fujitsu.com/global/Images/wp-eternus-cs8000-technical-concepts-ww-en_FJJ.pdf at 4 ("ETERNUS CS800 is a data protection appliance optimized for environments where IT-organizations want replace backup to traditional tape by backup to disk. Utilizing leading deduplication and compression technology, the disk capacity requirements can be reduced by up to 95%. ... Data deduplication technology reduces disk capacity requirements such enabling large cost savings."). Thus, with knowledge of the '992 patent gained from at least the filing and service

of the original Complaint in this action, Fujitsu encouraged users of the Accused Instrumentalities to use their deduplication/compression functionality to infringe the '992 patent, knowing that such use constituted infringement of the '992 patent.

117. For similar reasons, Fujitsu also induces its customers to use the Accused Instrumentalities to infringe other claims of the '992 patent. Fujitsu specifically intended and was aware that these normal and customary activities would infringe the '992 patent. Fujitsu performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the '992 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, Fujitsu engaged in such inducement to promote the sales of the Accused Instrumentalities. Accordingly, Fujitsu has induced and continues to induce users of the Accused Instrumentalities to use the Accused Instrumentalities in their ordinary and customary way to infringe the '992 patent, knowing that such use constitutes infringement of the '992 patent.

118. By making, using, offering for sale, selling and/or importing into the United States the Accused Instrumentalities, and touting the benefits of using the Accused Instrumentalities' compression features, Fujitsu has injured Realtime and is liable to Realtime for infringement of the '992 patent pursuant to 35 U.S.C. § 271.

119. As a result of Fujitsu's infringement of the '992 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Fujitsu's infringement, but in no event less than a reasonable royalty for the use made of the invention by Fujitsu, together with interest and costs as fixed by the Court.

Quantum DXi

120. On information and belief, Quantum has made, used, offered for sale, sold and/or imported into the United States Quantum products that infringe the '992 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, Quantum's compression products and services, such as, *e.g.*, Quantum's DXi software (*e.g.*, powered by Quantum StorNext high-performance file system) (including as incorporated into

third-party products such as the Fujitsu Eternus CS800 Data Protection Appliance), DXi 2500, DXi 3500, DXi 4500, DXi 4700 (e.g. DXi 4701), DXi 6500 (e.g. DXi 6510, DXi 6520, DXi 6530, DXi 6540, DXi 6550), DXi 6800, DXi 6900, DXi 7500, and DXi 8500 Deduplication Appliances, DXi V-Series (e.g. DXi V4000) virtual deduplication backup appliance, Q-Cloud Protect virtual deduplication appliance, Quantum GoProtect Software, and all versions and variations thereof since the issuance of the '992 patent ("Accused Instrumentality").

121. On information and belief, Quantum has directly infringed and continues to infringe at least claim 48 of the '992 patent, for example, through its own use and testing of the Accused Instrumentalities to practice compression methods claimed by the '992 patent, including a computer implemented method comprising: receiving a data block; associating at least one encoder to each one of several data types; analyzing data within the data block to identify a first data type of the data within the data block; compressing if said first data type is the same as one of said several data types, said data block with said at least one encoder associated with said one of said several data types that is the same as said first data type to provide a compressed data block; and compressing, if said first data type is not the same as one of said several data types, said data block with a default encoder to provide said compressed data block, wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block. Upon information and belief, Fujitsu uses the Accused Instrumentality to practice infringing methods for its own internal non-testing business purposes, while testing the Accused Instrumentality, and while providing technical support for the Accused Instrumentality to Quantum's customers.

122. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, "a computer implemented method comprising: receiving a data block". See, e.g., <https://www.scribd.com/document/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 4 ("The new, inline data flow enabled by the DXi 2.0 Software deduplicates data as it is ingested into the DXi appliance. Optimized for the new generation of purpose-built DXi hardware platforms, it provides enhanced performance and more efficient

dynamic use of system resources”).

123. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “associating at least one encoder to each one of several data types.” Even if the determination of whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality were found not to literally meet the “associating at least one encoder to each one of several data types” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, determining whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality performs substantially the same function (for example, to provide the Accused Instrumentality with some parameter of the data that can be used as a basis to select the optimal data compression method among multiple available data compression methods) in substantially the same way (by, for example, identifying some characteristic of the data, beyond a mere descriptor that is indicative of the data type of the data within the data block, that is relevant to selecting among multiple available data compression methods) to achieve substantially the same result (for example, enabling the Accused Instrumentality to select the optimal data compression method from among multiple available data compression methods). *See, e.g.,* <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside

files created by different applications, and inside files created at different times.”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

124. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “analyzing data within the data block to identify a first data type of the data within the data block”. Even if the determination of whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality were found not to literally meet the “analyzing data within the data block to identify a first data type of the data within the data block” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, determining whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality performs substantially the same function (for example, to provide the

Accused Instrumentality with some parameter of the data that can be used as a basis to select the optimal data compression method among multiple available data compression methods) in substantially the same way (by, for example, identifying some characteristic of the data, beyond a mere descriptor that is indicative of the data type of the data within the data block, that is relevant to selecting among multiple available data compression methods) to achieve substantially the same result (for example, enabling the Accused Instrumentality to select the optimal data compression method from among multiple available data compression methods). *See, e.g.,* <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times.”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-

file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

125. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “compressing if said first data type is the same as one of said several data types, said data block with said at least one encoder associated with said one of said several data types that is the same as said first data type to provide a compressed data block”. Even if the determination of whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality were found not to literally meet the “compressing if said first data type is the same as one of said several data types, said data block with said at least one encoder associated with said one of said several data types that is the same as said first data type to provide a compressed data block” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, determining whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality performs substantially the same function (for example, to provide the Accused Instrumentality with some parameter of the data that can be used as a basis to select the optimal data compression method among multiple available data compression methods) in substantially the same way (by, for example, identifying some characteristic of the data, beyond a mere descriptor that is indicative of the data type of the data within the data block, that is relevant to selecting among multiple available data compression methods) to achieve substantially the same result (for example, enabling the Accused Instrumentality to select the optimal data compression method from among multiple available data compression methods).

See, e.g.,

<http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times.”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

126. The Accused Instrumentality satisfies literally and/or under the doctrine of

equivalents the claim requirement, “compressing, if said first data type is not the same as one of said several data types, said data block with a default encoder to provide said compressed data block, wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block.” Even if the determination of whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality were found not to literally meet the “compressing, if said first data type is not the same as one of said several data types, said data block with a default encoder to provide said compressed data block, wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, determining whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality performs substantially the same function (for example, to provide the Accused Instrumentality with some parameter of the data that can be used as a basis to select the optimal data compression method among multiple available data compression methods) in substantially the same way (by, for example, identifying some characteristic of the data, beyond a mere descriptor that is indicative of the data type of the data within the data block, that is relevant to selecting among multiple available data compression methods) to achieve substantially the same result (for example, enabling the Accused Instrumentality to select the optimal data compression method from among multiple available data compression methods). *See, e.g.*, <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi6500 systems use compression technology after duplicate blocks have been identified and replaced as part of the deduplication process. With compression, unique data that has been through the data deduplication process can be compressed at a typical ratio of approximately 2:1. This enables you to maximize the storage capacity of your system.”); <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data

deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum's deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to "float" within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times."); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 ("The DXi-Series disk backup and replication systems use Quantum's patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum's innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.").

127. On information and belief, Quantum also directly infringes and continues to infringe other claims of the '992 patent, for similar reasons as explained above with respect to

Claim 48 of the '992 patent.

128. On information and belief, all of the Accused Instrumentalities perform the claimed methods in substantially the same way.

129. On information and belief, use of the Accused Instrumentality in its ordinary and customary fashion results in infringement of the methods claimed by the '992 patent.

130. On information and belief, Quantum has had knowledge of the '992 patent since at least the filing of this Complaint or shortly thereafter, and on information and belief, Quantum knew of the '992 patent and knew of its infringement, including by way of this lawsuit.

131. Quantum's affirmative acts of making, using, selling, offering for sale, and/or importing the Accused Instrumentalities have induced and continue to induce users of the Accused Instrumentalities to use the Accused Instrumentalities in their normal and customary way to infringe the '992 patent by practicing compression methods claimed by the '992 patent, including a computer implemented method comprising: receiving a data block; associating at least one encoder to each one of several data types; analyzing data within the data block to identify a first data type of the data within the data block; compressing if said first data type is the same as one of said several data types, said data block with said at least one encoder associated with said one of said several data types that is the same as said first data type to provide a compressed data block; and compressing, if said first data type is not the same as one of said several data types, said data block with a default encoder to provide said compressed data block, wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block. For example, Quantum instructs users of DXi about the advantages of its deduplication and compression features. *See, e.g.,* <https://www.scribd.com/document/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 ("The DXi-Series disk backup and replication systems use Quantum's patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-

effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum's innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. ... The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network."'). Thus, with knowledge of the '992 patent gained from at least the filing and service of the original Complaint in this action, Quantum encouraged users of the Accused Instrumentalities to use their deduplication/compression functionality to infringe the '992 patent, knowing that such use constituted infringement of the '992 patent.

132. For similar reasons, Quantum also induces its customers to use the Accused Instrumentalities to infringe other claims of the '992 patent. Quantum specifically intended and was aware that these normal and customary activities would infringe the '992 patent. Quantum performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the '992 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, Quantum engaged in such inducement to promote the sales of the Accused Instrumentalities. Accordingly, Quantum has induced and continues to induce users of the Accused Instrumentalities to use the Accused Instrumentalities in their ordinary and customary way to infringe the '992 patent, knowing that such use constitutes infringement of the '992 patent.

133. By making, using, offering for sale, selling and/or importing into the United States the Accused Instrumentalities, and touting the benefits of using the Accused Instrumentalities' compression features, Quantum has injured Realtime and is liable to Realtime for infringement of the '992 patent pursuant to 35 U.S.C. § 271.

134. As a result of Quantum's infringement of the '992 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Quantum's infringement,

but in no event less than a reasonable royalty for the use made of the invention by Quantum, together with interest and costs as fixed by the Court.

Quantum DXi Accent

135. On information and belief, Quantum has made, used, offered for sale, sold and/or imported into the United States Quantum products that infringe the ‘992 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, Quantum’s compression products and services, such as, *e.g.*, Quantum’s DXi Accent, and all versions and variations thereof since the issuance of the ‘992 patent (“Accused Instrumentality”).

136. On information and belief, Quantum has directly infringed and continues to infringe at least claim 48 of the ‘992 patent, for example, through its own use and testing of the Accused Instrumentalities to practice compression methods claimed by the ‘992 patent, including a computer implemented method comprising: receiving a data block; associating at least one encoder to each one of several data types; analyzing data within the data block to identify a first data type of the data within the data block; compressing if said first data type is the same as one of said several data types, said data block with said at least one encoder associated with said one of said several data types that is the same as said first data type to provide a compressed data block; and compressing, if said first data type is not the same as one of said several data types, said data block with a default encoder to provide said compressed data block, wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block. Upon information and belief, Fujitsu uses the Accused Instrumentality to practice infringing methods for its own internal non-testing business purposes, while testing the Accused Instrumentality, and while providing technical support for the Accused Instrumentality to Quantum’s customers.

137. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “a computer implemented method comprising: receiving a data block”. *See, e.g.*, <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“With DXi Accent, the backup server collaborates in the deduplication process by carrying out the initial

deduplication phases, specifically: 1) Dividing the stream of data into variable-length blocks and computing the signature for each one, 2) Collaborating with the DXi to identify the new unique blocks, and 3) Compressing the new unique blocks and transmitting them to the DXi appliance for storage in the blockpool.”).

138. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “associating at least one encoder to each one of several data types.” Even if the determination of whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality were found not to literally meet the “associating at least one encoder to each one of several data types” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, determining whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality performs substantially the same function (for example, to provide the Accused Instrumentality with some parameter of the data that can be used as a basis to select the optimal data compression method among multiple available data compression methods) in substantially the same way (by, for example, identifying some characteristic of the data, beyond a mere descriptor that is indicative of the data type of the data within the data block, that is relevant to selecting among multiple available data compression methods) to achieve substantially the same result (for example, enabling the Accused Instrumentality to select the optimal data compression method from among multiple available data compression methods). *See, e.g.,*

<https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“With DXi Accent, the backup server collaborates in the deduplication process by carrying out the initial deduplication phases, specifically: 1) Dividing the stream of data into variable-length blocks and computing the signature for each one, 2) Collaborating with the DXi to identify the new unique blocks, and 3) Compressing the new unique blocks and transmitting them to the DXi appliance for storage in the blockpool. In order to determine the unique blocks, the signatures for all the blocks are sent by

the server to the DXi appliance. The DXi compares the signatures to its central index and returns to the backup server a list of signatures for the unique blocks not already present in the blockpool. ... For blocks already present in the blockpool, the DXi simply stores a pointer to the existing block.”).

139. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “analyzing data within the data block to identify a first data type of the data within the data block”. Even if the determination of whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality were found not to literally meet the “analyzing data within the data block to identify a first data type of the data within the data block” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, determining whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality performs substantially the same function (for example, to provide the Accused Instrumentality with some parameter of the data that can be used as a basis to select the optimal data compression method among multiple available data compression methods) in substantially the same way (by, for example, identifying some characteristic of the data, beyond a mere descriptor that is indicative of the data type of the data within the data block, that is relevant to selecting among multiple available data compression methods) to achieve substantially the same result (for example, enabling the Accused Instrumentality to select the optimal data compression method from among multiple available data compression methods). *See, e.g.,* <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“With DXi Accent, the backup server collaborates in the deduplication process by carrying out the initial deduplication phases, specifically: 1) Dividing the stream of data into variable-length blocks and computing the signature for each one, 2) Collaborating with the DXi to identify the new unique blocks, and 3) Compressing the new unique blocks and transmitting them to the DXi appliance for storage in the blockpool. In order to determine the unique blocks, the signatures for all the blocks are sent by

the server to the DXi appliance. The DXi compares the signatures to its central index and returns to the backup server a list of signatures for the unique blocks not already present in the blockpool. ... For blocks already present in the blockpool, the DXi simply stores a pointer to the existing block.”).

140. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “compressing if said first data type is the same as one of said several data types, said data block with said at least one encoder associated with said one of said several data types that is the same as said first data type to provide a compressed data block”. Even if the determination of whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality were found not to literally meet the “compressing if said first data type is the same as one of said several data types, said data block with said at least one encoder associated with said one of said several data types that is the same as said first data type to provide a compressed data block” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, determining whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality performs substantially the same function (for example, to provide the Accused Instrumentality with some parameter of the data that can be used as a basis to select the optimal data compression method among multiple available data compression methods) in substantially the same way (by, for example, identifying some characteristic of the data, beyond a mere descriptor that is indicative of the data type of the data within the data block, that is relevant to selecting among multiple available data compression methods) to achieve substantially the same result (for example, enabling the Accused Instrumentality to select the optimal data compression method from among multiple available data compression methods). *See, e.g.,* <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“With DXi Accent, the backup server collaborates in the deduplication process by carrying out the initial deduplication

phases, specifically: 1) Dividing the stream of data into variable-length blocks and computing the signature for each one, 2) Collaborating with the DXi to identify the new unique blocks, and 3) Compressing the new unique blocks and transmitting them to the DXi appliance for storage in the blockpool. In order to determine the unique blocks, the signatures for all the blocks are sent by the server to the DXi appliance. The DXi compares the signatures to its central index and returns to the backup server a list of signatures for the unique blocks not already present in the blockpool. ... For blocks already present in the blockpool, the DXi simply stores a pointer to the existing block.”).

141. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “compressing, if said first data type is not the same as one of said several data types, said data block with a default encoder to provide said compressed data block, wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block.” Even if the determination of whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality were found not to literally meet the “compressing, if said first data type is not the same as one of said several data types, said data block with a default encoder to provide said compressed data block, wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, determining whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality performs substantially the same function (for example, to provide the Accused Instrumentality with some parameter of the data that can be used as a basis to select the optimal data compression method among multiple available data compression methods) in substantially the same way (by, for example, identifying some characteristic of the data, beyond a mere descriptor that is indicative of

the data type of the data within the data block, that is relevant to selecting among multiple available data compression methods) to achieve substantially the same result (for example, enabling the Accused Instrumentality to select the optimal data compression method from among multiple available data compression methods). *See, e.g.,* <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“In order to determine the unique blocks, the signatures for all the blocks are sent by the server to the DXi appliance. The DXi compares the signatures to its central index and returns to the backup server a list of signatures for the unique blocks not already present in the blockpool. The backup server compresses these blocks and transmits them to the DXi to be stored.”).

142. On information and belief, Quantum also directly infringes and continues to infringe other claims of the ‘992 patent, for similar reasons as explained above with respect to Claim 48 of the ‘992 patent.

143. On information and belief, all of the Accused Instrumentalities perform the claimed methods in substantially the same way.

144. On information and belief, use of the Accused Instrumentality in its ordinary and customary fashion results in infringement of the methods claimed by the ‘992 patent.

145. On information and belief, Quantum has had knowledge of the ‘992 patent since at least the filing of this Complaint or shortly thereafter, and on information and belief, Quantum knew of the ‘992 patent and knew of its infringement, including by way of this lawsuit.

146. Quantum’s affirmative acts of making, using, selling, offering for sale, and/or importing the Accused Instrumentalities have induced and continue to induce users of the Accused Instrumentalities to use the Accused Instrumentalities in their normal and customary way to infringe the ‘992 patent by practicing compression methods claimed by the ‘992 patent, including a computer implemented method comprising: receiving a data block; associating at least one encoder to each one of several data types; analyzing data within the data block to identify a first data type of the data within the data block; compressing if said first data type is the same as one of said several data types, said data block with said at least one encoder associated with said one

of said several data types that is the same as said first data type to provide a compressed data block; and compressing, if said first data type is not the same as one of said several data types, said data block with a default encoder to provide said compressed data block, wherein the analyzing of the data within the data block to identify one or more data types excludes analyzing based only on a descriptor that is indicative of the data type of the data within the data block. For example, Quantum instructs users of DXi Accent about the advantages of its deduplication and compression features. *See, e.g.*, <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“DXi Accent is software from Quantum that enables a hybrid or collaborative approach to deduplication, combining the best features of both target and source-based systems. DXi Accent uses variable-length deduplication for the most effective data reduction, and it takes advantage of purpose-built DXi appliances for scalability, performance, and ease of integration, but it moves a portion of the deduplication process to the backup server so that only unique blocks are transmitted to the target appliance. This system, which leverages much of the underlying functionality of the DXi replication, allows DXi Accent to accelerate backups where network bandwidth is the limiting factor while limiting the impact on the backup server and maintaining DXi features that integrate deduplication effectively into the larger data protection environment. ... For example, for a backup where 10% of the blocks are new, the potential effective transmission rate will be approximately 10 times more than when using a target-based approach alone. ... This division of tasks between the backup server and DXi maximizes end-to-end performance while minimizing loading effects on the backup server because it leaves most of the processor-intensive tasks on the appliance ... As a result, the backup server requirements for DXi Accent are significantly lower than for traditional source-based architectures, and much more data can be protected with the same resources.”). Thus, with knowledge of the ‘992 patent gained from at least the filing and service of the original Complaint in this action, Quantum encouraged users of the Accused Instrumentalities to use their deduplication/compression functionality to infringe the ‘992 patent, knowing that such use constituted infringement of the ‘992 patent.

147. For similar reasons, Quantum also induces its customers to use the Accused

Instrumentalities to infringe other claims of the ‘992 patent. Quantum specifically intended and was aware that these normal and customary activities would infringe the ‘992 patent. Quantum performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the ‘992 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, Quantum engaged in such inducement to promote the sales of the Accused Instrumentalities. Accordingly, Quantum has induced and continues to induce users of the Accused Instrumentalities to use the Accused Instrumentalities in their ordinary and customary way to infringe the ‘992 patent, knowing that such use constitutes infringement of the ‘992 patent.

148. By making, using, offering for sale, selling and/or importing into the United States the Accused Instrumentalities, and touting the benefits of using the Accused Instrumentalities’ compression features, Quantum has injured Realtime and is liable to Realtime for infringement of the ‘992 patent pursuant to 35 U.S.C. § 271.

149. As a result of Quantum’s infringement of the ‘992 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Quantum’s infringement, but in no event less than a reasonable royalty for the use made of the invention by Quantum, together with interest and costs as fixed by the Court.

COUNT IV

INFRINGEMENT OF U.S. PATENT NO. 7,415,530

150. Plaintiff Realtime realleges and incorporates by reference paragraphs 1-149 above, as if fully set forth herein.

151. Plaintiff Realtime is the owner by assignment of United States Patent No. 7,415,530 (“the ‘530 Patent”) entitled “System and methods for accelerated data storage and retrieval.” The ‘530 Patent was duly and legally issued by the United States Patent and Trademark Office on August 19, 2008. A true and correct copy of the ‘530 Patent, including its reexamination certificate, is included as Exhibit D.

Fujitsu Eternus Data Protection Appliance

152. On information and belief, Fujitsu has made, used, offered for sale, sold and/or imported into the United States Fujitsu products that infringe the ‘530 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, Fujitsu’s compression products and services, such as, *e.g.*, the Fujitsu Eternus CS 800, Eternus CS 8000, Eternus CS HE, Eternus CS 200c, Eternus DX, and Eternus LT Data Protection Appliances and all versions and variations thereof since the issuance of the ‘530 patent (“Accused Instrumentality”).

153. On information and belief, Fujitsu has directly infringed and continues to infringe at least Claim 1 of the ‘530 patent, for example, through its own use, testing, sale, offer for sale, and/or importation of the Accused Instrumentalities and computer systems running the Accused Instrumentalities, which when used as designed and intended, constitute a system comprising: a memory device; and a data accelerator, wherein said data accelerator is coupled to said memory device, a data stream is received by said data accelerator in received form, said data stream includes a first data block and a second data block, said data stream is compressed by said data accelerator to provide a compressed data stream by compressing said first data block with a first compression technique and said second data block with a second compression technique, said first and second compression techniques are different, said compressed data stream is stored on said memory device, said compression and storage occurs faster than said data stream is able to be stored on said memory device in said received form, a first data descriptor is stored on said memory device indicative of said first compression technique, and said first descriptor is utilized to decompress the portion of said compressed data stream associated with said first data block. Upon information and belief, Fujitsu uses the Accused Instrumentality to practice infringing methods for its own internal non-testing business purposes, while testing the Accused Instrumentality, and while providing technical support for the Accused Instrumentality to Fujitsu’s customers.

154. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “A system comprising: a memory device.” *See, e.g.*, <http://www.fujitsu.com/fts/products/computing/storage/data-protection/cs800/> (“FUJITSU

Storage ETERNUS CS800 is a turnkey data protection appliance and provides a simple and affordable solution for customers which follow a disk backup strategy with deduplication. The advanced deduplication technology reduces typical disk capacity requirements for disk to disk backup by up to 95%.’).

155. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “a data accelerator, wherein said data accelerator is coupled to said memory device, a data stream is received by said data accelerator in received form, said data stream includes a first data block and a second data block, said data stream is compressed by said data accelerator to provide a compressed data stream.” *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most mature on the market. It’s a great piece of software.’”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

156. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “by compressing said first data block with a first compression technique and said second data block with a second compression technique, said first and second compression techniques are different”. Even if the determination of whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed

and/or stored by the Accused Instrumentality were found not to literally meet the “compression technique” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, determining whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality performs substantially the same function (for example, to provide the Accused Instrumentality with some parameter of the data that can be used as a basis to select the optimal data compression method among multiple available data compression methods) in substantially the same way (by, for example, identifying some characteristic of the data, beyond a mere descriptor that is indicative of the data type of the data within the data block, that is relevant to selecting among multiple available data compression methods) to achieve substantially the same result (for example, enabling the Accused Instrumentality to select the optimal data compression method from among multiple available data compression methods). *See, e.g.,*

http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most mature on the market. It’s a great piece of software.’”); <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times.”);

<http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

157. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “said compressed data stream is stored on said memory device.” *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most mature on the market. It’s a great piece of software.’”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an

earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

158. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “said compression and storage occurs faster than said data stream is able to be stored on said memory device in said received form.” *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most mature on the market. It’s a great piece of software.’”); <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Since the benefit of deduplication is two-fold: (1) reduce data stored on disk, and (2) reduce network traffic (LAN or WAN), a 2x or 10x difference in data reduction can have very material impact to storage, network and cloud costs. ... Data deduplication makes the process of replicating backup data practical by reducing the bandwidth and cost needed to create and maintain duplicate data sets over networks. At a basic level, deduplication-enabled replication is similar to deduplication-enabled data stores. Once two images of a backup data store are created, all that is required to keep the replica or target identical to the source is the periodic copying and movement of the new data segments added during each backup event, along with its metadata image, or namespace.”).

159. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “a first data descriptor is stored on said memory device indicative of said first compression technique, and said first descriptor is utilized to decompress the portion of said compressed data stream associated with said first data block.” *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most

mature on the market. It's a great piece of software.”); <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times.”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

160. On information and belief, Fujitsu also directly infringes and continues to infringe other claims of the '530 patent, for similar reasons as explained above with respect to Claim 1 of the '530 patent.

161. On information and belief, all of the Accused Instrumentalities constitute the claimed systems in substantially the same way.

162. On information and belief, use of the Accused Instrumentality in its ordinary and customary fashion results in infringement of the systems claimed by the '530 patent.

163. On information and belief, Fujitsu has had knowledge of the '530 patent since at least the filing of this Complaint or shortly thereafter, and on information and belief, Fujitsu knew of the '530 patent and knew of its infringement, including by way of this lawsuit.

164. Fujitsu's affirmative acts of making, using, selling, offering for sale, and/or importing the Accused Instrumentalities have induced and continue to induce users of the Accused Instrumentalities to use the Accused Instrumentalities in their normal and customary way on compatible systems to infringe the '530 patent, knowing that when the Accused Instrumentalities are used in their ordinary and customary manner with such compatible systems, such systems are converted into infringing systems comprising: a memory device; and a data accelerator, wherein said data accelerator is coupled to said memory device, a data stream is received by said data accelerator in received form, said data stream includes a first data block and a second data block, said data stream is compressed by said data accelerator to provide a compressed data stream by compressing said first data block with a first compression technique and said second data block with a second compression technique, said first and second compression techniques are different, said compressed data stream is stored on said memory device, said compression and storage occurs faster than said data stream is able to be stored on said memory device in said received form, a first data descriptor is stored on said memory device indicative of said first compression technique, and said first descriptor is utilized to decompress the portion of said compressed data stream associated with said first data block, thereby infringing the '530 patent. For example, Fujitsu instructs users of the Fujitsu CS800 Data Protection Appliance about the advantages of its

deduplication and compression features. *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most mature on the market. It’s a great piece of software.’”); https://www.fujitsu.com/global/Images/wp-eternus-cs8000-technical-concepts-ww-en_FJJ.pdf at 4 (“ETERNUS CS800 is a data protection appliance optimized for environments where IT-organizations want replace backup to traditional tape by backup to disk. Utilizing leading deduplication and compression technology, the disk capacity requirements can be reduced by up to 95%. ... Data deduplication technology reduces disk capacity requirements such enabling large cost savings.”). Thus, with knowledge of the ‘530 patent gained from at least the filing and service of the original Complaint in this action, Fujitsu encouraged users of the Accused Instrumentalities to use their deduplication/compression functionality to infringe the ‘530 patent, knowing that such use constituted infringement of the ‘530 patent.

165. By making, using, offering for sale, selling and/or importing into the United States the Accused Instrumentalities, and touting the benefits of using the Accused Instrumentalities’ compression features, Fujitsu has injured Realtime and is liable to Realtime for infringement of the ‘530 patent pursuant to 35 U.S.C. § 271.

166. As a result of Fujitsu’s infringement of the ‘530 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Fujitsu’s infringement, but in no event less than a reasonable royalty for the use made of the invention by Fujitsu, together with interest and costs as fixed by the Court.

Quantum DXi

167. On information and belief, Quantum has made, used, offered for sale, sold and/or imported into the United States Quantum products that infringe the ‘530 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, Quantum’s compression products and services, such as, *e.g.*, Quantum’s DXi software (*e.g.*,

powered by Quantum StorNext high-performance file system) (including as incorporated into third-party products such as the Fujitsu Eternus CS800 Data Protection Appliance), DXi 2500, DXi 3500, DXi 4500, DXi 4700 (e.g. DXi 4701), DXi 6500 (e.g. DXi 6510, DXi 6520, DXi 6530, DXi 6540, DXi 6550), DXi 6800, DXi 6900, DXi 7500, and DXi 8500 Deduplication Appliances, DXi V-Series (e.g. DXi V4000) virtual deduplication backup appliance, Q-Cloud Protect virtual deduplication appliance, Quantum GoProtect Software, and all versions and variations thereof since the issuance of the '530 patent ("Accused Instrumentality").

168. On information and belief, Quantum has directly infringed and continues to infringe at least Claim 1 of the '530 patent, for example, through its own use, testing, sale, offer for sale, and/or importation of the Accused Instrumentalities and computer systems running the Accused Instrumentalities, which when used as designed and intended, constitute a system comprising: a memory device; and a data accelerator, wherein said data accelerator is coupled to said memory device, a data stream is received by said data accelerator in received form, said data stream includes a first data block and a second data block, said data stream is compressed by said data accelerator to provide a compressed data stream by compressing said first data block with a first compression technique and said second data block with a second compression technique, said first and second compression techniques are different, said compressed data stream is stored on said memory device, said compression and storage occurs faster than said data stream is able to be stored on said memory device in said received form, a first data descriptor is stored on said memory device indicative of said first compression technique, and said first descriptor is utilized to decompress the portion of said compressed data stream associated with said first data block. Upon information and belief, Quantum uses the Accused Instrumentality to practice infringing methods for its own internal non-testing business purposes, while testing the Accused Instrumentality, and while providing technical support for the Accused Instrumentality to Quantum's customers.

169. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, "A system comprising: a memory device." *See, e.g.,* <https://www.scribd.com/document/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd>

at 9 (“The DXi6500 system is based upon high speed disk drives instead of tape drives ... To optimize performance, the DXi6500 uses both hard disk drives (HDDs) and solid state drives (SSDs).”).

170. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “a data accelerator, wherein said data accelerator is coupled to said memory device, a data stream is received by said data accelerator in received form, said data stream includes a first data block and a second data block, said data stream is compressed by said data accelerator to provide a compressed data stream.” *See, e.g.,* <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

171. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “by compressing said first data block with a first compression technique and said second data block with a second compression technique, said first and second compression techniques are different”. Even if the determination of whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality were found not to literally meet the “compression technique” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, determining whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality performs substantially

the same function (for example, to provide the Accused Instrumentality with some parameter of the data that can be used as a basis to select the optimal data compression method among multiple available data compression methods) in substantially the same way (by, for example, identifying some characteristic of the data, beyond a mere descriptor that is indicative of the data type of the data within the data block, that is relevant to selecting among multiple available data compression methods) to achieve substantially the same result (for example, enabling the Accused Instrumentality to select the optimal data compression method from among multiple available data compression methods). *See, e.g.,*

<http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times.”);

<http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total

system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

172. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “said compressed data stream is stored on said memory device.” *See, e.g.,* <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

173. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “said compression and storage occurs faster than said data stream is able to be stored on said memory device in said received form.” *See, e.g.,* <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Since the benefit of deduplication is two-fold: (1) reduce data stored on disk, and (2) reduce network traffic (LAN or WAN), a 2x or 10x difference in data reduction can have very material impact to storage, network and cloud costs. ... Data deduplication makes the process of replicating backup data practical by reducing the bandwidth and cost needed to create and maintain duplicate data sets over networks. At a basic level, deduplication-enabled replication is similar to deduplication-enabled data stores.

Once two images of a backup data store are created, all that is required to keep the replica or target identical to the source is the periodic copying and movement of the new data segments added during each backup event, along with its metadata image, or namespace.”).

174. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “a first data descriptor is stored on said memory device indicative of said first compression technique, and said first descriptor is utilized to decompress the portion of said compressed data stream associated with said first data block.” *See, e.g.,* <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times.”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-

file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

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177. On information and belief, use of the Accused Instrumentality in its ordinary and customary fashion results in infringement of the systems claimed by the ‘530 patent.

178. On information and belief, Quantum has had knowledge of the ‘530 patent since at least the filing of this Complaint or shortly thereafter, and on information and belief, Quantum knew of the ‘530 patent and knew of its infringement, including by way of this lawsuit.

179. Quantum’s affirmative acts of making, using, selling, offering for sale, and/or importing the Accused Instrumentalities have induced and continue to induce users of the Accused Instrumentalities to use the Accused Instrumentalities in their normal and customary way on compatible systems to infringe the ‘530 patent, knowing that when the Accused Instrumentalities are used in their ordinary and customary manner with such compatible systems, such systems are converted into infringing systems comprising: a memory device; and a data accelerator, wherein said data accelerator is coupled to said memory device, a data stream is received by said data accelerator in received form, said data stream includes a first data block and a second data block, said data stream is compressed by said data accelerator to provide a compressed data stream by compressing said first data block with a first compression technique and said second data block with a second compression technique, said first and second compression techniques are different,

said compressed data stream is stored on said memory device, said compression and storage occurs faster than said data stream is able to be stored on said memory device in said received form, a first data descriptor is stored on said memory device indicative of said first compression technique, and said first descriptor is utilized to decompress the portion of said compressed data stream associated with said first data block, thereby infringing the ‘530 patent. For example, Quantum instructs users of DXi about the advantages of its deduplication and compression features. *See, e.g.,* <https://www.scribd.com/document/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. ... The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”). Thus, with knowledge of the ‘530 patent gained from at least the filing and service of the original Complaint in this action, Quantum encouraged users of the Accused Instrumentalities to use their deduplication/compression functionality to infringe the ‘530 patent, knowing that such use constituted infringement of the ‘530 patent.

180. By making, using, offering for sale, selling and/or importing into the United States the Accused Instrumentalities, and touting the benefits of using the Accused Instrumentalities’ compression features, Quantum has injured Realtime and is liable to Realtime for infringement of the ‘530 patent pursuant to 35 U.S.C. § 271.

181. As a result of Quantum’s infringement of the ‘530 patent, Plaintiff Realtime is

entitled to monetary damages in an amount adequate to compensate for Quantum's infringement, but in no event less than a reasonable royalty for the use made of the invention by Quantum, together with interest and costs as fixed by the Court.

Quantum DXi Accent

182. On information and belief, Quantum has made, used, offered for sale, sold and/or imported into the United States Quantum products that infringe the '530 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, Quantum's compression products and services, such as, *e.g.*, Quantum's DXi Accent, and all versions and variations thereof since the issuance of the '530 patent ("Accused Instrumentality").

183. On information and belief, Quantum has directly infringed and continues to infringe at least Claim 1 of the '530 patent, for example, through its own use, testing, sale, offer for sale, and/or importation of the Accused Instrumentalities and computer systems running the Accused Instrumentalities, which when used as designed and intended, constitute a system comprising: a memory device; and a data accelerator, wherein said data accelerator is coupled to said memory device, a data stream is received by said data accelerator in received form, said data stream includes a first data block and a second data block, said data stream is compressed by said data accelerator to provide a compressed data stream by compressing said first data block with a first compression technique and said second data block with a second compression technique, said first and second compression techniques are different, said compressed data stream is stored on said memory device, said compression and storage occurs faster than said data stream is able to be stored on said memory device in said received form, a first data descriptor is stored on said memory device indicative of said first compression technique, and said first descriptor is utilized to decompress the portion of said compressed data stream associated with said first data block. Upon information and belief, Quantum uses the Accused Instrumentality to practice infringing methods for its own internal non-testing business purposes, while testing the Accused Instrumentality, and while providing technical support for the Accused Instrumentality to Quantum's customers.

184. The Accused Instrumentality satisfies literally and/or under the doctrine of

equivalents the claim requirement, “A system comprising: a memory device.” *See, e.g.,* <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (Figure 1) (“Data written to disk”).

185. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “a data accelerator, wherein said data accelerator is coupled to said memory device, a data stream is received by said data accelerator in received form, said data stream includes a first data block and a second data block, said data stream is compressed by said data accelerator to provide a compressed data stream.” *See, e.g.,* <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“This system, which leverages much of the underlying functionality of the DXi replication, allows DXi Accent to accelerate backups where network bandwidth is the limiting factor ... For example, for a backup where 10% of the blocks are new, the potential effective transmission rate will be approximately 10 times more than when using a target-based approach alone. ... With DXi Accent, the backup server collaborates in the deduplication process by carrying out the initial deduplication phases, specifically: 1) Dividing the stream of data into variable-length blocks and computing the signature for each one, 2) Collaborating with the DXi to identify the new unique blocks, and 3) Compressing the new unique blocks and transmitting them to the DXi appliance for storage in the blockpool. In order to determine the unique blocks, the signatures for all the blocks are sent by the server to the DXi appliance. The DXi compares the signatures to its central index and returns to the backup server a list of signatures for the unique blocks not already present in the blockpool. The backup server compresses these blocks and transmits them to the DXi to be stored. For blocks already present in the blockpool, the DXi simply stores a pointer to the existing block.”).

186. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement “by compressing said first data block with a first compression technique and said second data block with a second compression technique, said first and second compression techniques are different”. Even if the determination of whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed

and/or stored by the Accused Instrumentality were found not to literally meet the “compression technique” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, determining whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality performs substantially the same function (for example, to provide the Accused Instrumentality with some parameter of the data that can be used as a basis to select the optimal data compression method among multiple available data compression methods) in substantially the same way (by, for example, identifying some characteristic of the data, beyond a mere descriptor that is indicative of the data type of the data within the data block, that is relevant to selecting among multiple available data compression methods) to achieve substantially the same result (for example, enabling the Accused Instrumentality to select the optimal data compression method from among multiple available data compression methods).

See, e.g.,

<https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“With DXi Accent, the backup server collaborates in the deduplication process by carrying out the initial deduplication phases, specifically: 1) Dividing the stream of data into variable-length blocks and computing the signature for each one, 2) Collaborating with the DXi to identify the new unique blocks, and 3) Compressing the new unique blocks and transmitting them to the DXi appliance for storage in the blockpool. In order to determine the unique blocks, the signatures for all the blocks are sent by the server to the DXi appliance. The DXi compares the signatures to its central index and returns to the backup server a list of signatures for the unique blocks not already present in the blockpool. The backup server compresses these blocks and transmits them to the DXi to be stored. For blocks already present in the blockpool, the DXi simply stores a pointer to the existing block.”).

187. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “said compressed data stream is stored on said memory device.” *See, e.g.,* <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“With DXi Accent, the backup server collaborates in the deduplication process by carrying out the initial

deduplication phases, specifically: 1) Dividing the stream of data into variable-length blocks and computing the signature for each one, 2) Collaborating with the DXi to identify the new unique blocks, and 3) Compressing the new unique blocks and transmitting them to the DXi appliance for storage in the blockpool. In order to determine the unique blocks, the signatures for all the blocks are sent by the server to the DXi appliance. The DXi compares the signatures to its central index and returns to the backup server a list of signatures for the unique blocks not already present in the blockpool. The backup server compresses these blocks and transmits them to the DXi to be stored. For blocks already present in the blockpool, the DXi simply stores a pointer to the existing block.”).

188. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “said compression and storage occurs faster than said data stream is able to be stored on said memory device in said received form.” *See, e.g.,* <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“This system, which leverages much of the underlying functionality of the DXi replication, allows DXi Accent to accelerate backups where network bandwidth is the limiting factor ... For example, for a backup where 10% of the blocks are new, the potential effective transmission rate will be approximately 10 times more than when using a target-based approach alone.”).

189. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “a first data descriptor is stored on said memory device indicative of said first compression technique, and said first descriptor is utilized to decompress the portion of said compressed data stream associated with said first data block.” *See, e.g.,* <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4-5 (“For blocks already present in the blockpool, the DXi simply stores a pointer to the existing block. ... With these systems, all the data needing recovery is sent back along the same path as the backup, not just the unique blocks that were transferred during the backup.”).

190. On information and belief, Quantum also directly infringes and continues to infringe other claims of the ‘530 patent, for similar reasons as explained above with respect to

Claim 1 of the '530 patent.

191. On information and belief, all of the Accused Instrumentalities constitute the claimed systems in substantially the same way.

192. On information and belief, use of the Accused Instrumentality in its ordinary and customary fashion results in infringement of the systems claimed by the '530 patent.

193. On information and belief, Quantum has had knowledge of the '530 patent since at least the filing of this Complaint or shortly thereafter, and on information and belief, Quantum knew of the '530 patent and knew of its infringement, including by way of this lawsuit.

194. Quantum's affirmative acts of making, using, selling, offering for sale, and/or importing the Accused Instrumentalities have induced and continue to induce users of the Accused Instrumentalities to use the Accused Instrumentalities in their normal and customary way on compatible systems to infringe the '530 patent, knowing that when the Accused Instrumentalities are used in their ordinary and customary manner with such compatible systems, such systems are converted into infringing systems comprising: a memory device; and a data accelerator, wherein said data accelerator is coupled to said memory device, a data stream is received by said data accelerator in received form, said data stream includes a first data block and a second data block, said data stream is compressed by said data accelerator to provide a compressed data stream by compressing said first data block with a first compression technique and said second data block with a second compression technique, said first and second compression techniques are different, said compressed data stream is stored on said memory device, said compression and storage occurs faster than said data stream is able to be stored on said memory device in said received form, a first data descriptor is stored on said memory device indicative of said first compression technique, and said first descriptor is utilized to decompress the portion of said compressed data stream associated with said first data block, thereby infringing the '530 patent. For example, Quantum instructs users of DXi Accent about the advantages of its deduplication and compression features. *See, e.g.*, <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 ("DXi Accent is software from Quantum that enables a hybrid or collaborative approach to deduplication,

combining the best features of both target and source-based systems. DXi Accent uses variable-length deduplication for the most effective data reduction, and it takes advantage of purpose-built DXi appliances for scalability, performance, and ease of integration, but it moves a portion of the deduplication process to the backup server so that only unique blocks are transmitted to the target appliance. This system, which leverages much of the underlying functionality of the DXi replication, allows DXi Accent to accelerate backups where network bandwidth is the limiting factor while limiting the impact on the backup server and maintaining DXi features that integrate deduplication effectively into the larger data protection environment. ... For example, for a backup where 10% of the blocks are new, the potential effective transmission rate will be approximately 10 times more than when using a target-based approach alone. ... This division of tasks between the backup server and DXi maximizes end-to-end performance while minimizing loading effects on the backup server because it leaves most of the processor-intensive tasks on the appliance ... As a result, the backup server requirements for DXi Accent are significantly lower than for traditional source-based architectures, and much more data can be protected with the same resources.”). Thus, with knowledge of the ‘530 patent gained from at least the filing and service of the original Complaint in this action, Quantum encouraged users of the Accused Instrumentalities to use their deduplication/compression functionality to infringe the ‘530 patent, knowing that such use constituted infringement of the ‘530 patent.

195. By making, using, offering for sale, selling and/or importing into the United States the Accused Instrumentalities, and touting the benefits of using the Accused Instrumentalities’ compression features, Quantum has injured Realtime and is liable to Realtime for infringement of the ‘530 patent pursuant to 35 U.S.C. § 271.

196. As a result of Quantum’s infringement of the ‘530 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Quantum’s infringement, but in no event less than a reasonable royalty for the use made of the invention by Quantum, together with interest and costs as fixed by the Court.

COUNT V

INFRINGEMENT OF U.S. PATENT NO. 8,643,513

197. Plaintiff realleges and incorporates by reference paragraphs 1-196 above, as if fully set forth herein.

198. Plaintiff Realtime is the owner by assignment of United States Patent No. 8,643,513 (“the ‘513 patent”) entitled “Data compression systems and methods.” The ‘513 patent was duly and legally issued by the United States Patent and Trademark Office on February 4, 2014. A true and correct copy of the ‘513 patent is included as Exhibit E.

Fujitsu Eternus Data Protection Appliance

199. On information and belief, Fujitsu has made, used, offered for sale, sold and/or imported into the United States Fujitsu products that infringe the ‘513 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, Fujitsu’s compression products and services, such as, *e.g.*, the Fujitsu Eternus CS 800, Eternus CS 8000, Eternus CS HE, Eternus CS 200c, Eternus DX, and Eternus LT Data Protection Appliances and all versions and variations thereof since the issuance of the ‘513 patent (“Accused Instrumentality”).

200. On information and belief, Fujitsu has directly infringed and continues to infringe Claim 1 of the ‘513 patent, for example, through its own use and testing of the Accused Instrumentalities to practice compression methods claimed by the ‘513 patent, including a method of compressing a plurality of data blocks, comprising: analyzing the plurality of data blocks to recognize when an appropriate content independent compression algorithm is to be applied to the plurality of data blocks; applying the appropriate content independent data compression algorithm to a portion of the plurality of data blocks to provide a compressed data portion; analyzing a data block from another portion of the plurality of data blocks for recognition of any characteristic, attribute, or parameter that is indicative of an appropriate content dependent algorithm to apply to the data block; and applying the appropriate content dependent data compression algorithm to the data block to provide a compressed data block when the characteristic, attribute, or parameter is identified, wherein the analyzing the plurality of data blocks to recognize when the appropriate

content independent compression algorithm is to be applied excludes analyzing based only on a descriptor indicative of the any characteristic, attribute, or parameter, and wherein the analyzing the data block to recognize the any characteristic, attribute, or parameter excludes analyzing based only on the descriptor. Upon information and belief, Fujitsu uses the Accused Instrumentality, an infringing system, for its own internal non-testing business purposes, while testing the Accused Instrumentality, and while providing technical support for the Accused Instrumentality to Fujitsu's customers.

201. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, "a method of compressing a plurality of data blocks, comprising: analyzing the plurality of data blocks to recognize when an appropriate content independent compression algorithm is to be applied to the plurality of data blocks; applying the appropriate content independent data compression algorithm to a portion of the plurality of data blocks to provide a compressed data portion." *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ ("But inside the CS800 S2 is Quantum's DXi deduplication software technology. Marcus Schneider, Fujitsu's director of storage product marketing, admitted this. He said: 'We believe the Quantum stack is the most mature on the market. It's a great piece of software.'"); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 ("The DXi6500 systems use compression technology after duplicate blocks have been identified and replaced as part of the deduplication process. With compression, unique data that has been through the data deduplication process can be compressed at a typical ratio of approximately 2:1. This enables you to maximize the storage capacity of your system.").

202. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, "analyzing a data block from another portion of the plurality of data blocks for recognition of any characteristic, attribute, or parameter that is indicative of an appropriate content dependent algorithm to apply to the data block; and applying the appropriate content dependent data compression algorithm to the data block to provide a compressed data

block when the characteristic, attribute, or parameter is identified”. Even if the deduplication function in the Accused Instrumentality were found to not literally meet the “analyzing a data block from another portion of the plurality of data blocks for recognition of any characteristic, attribute, or parameter that is indicative of an appropriate content dependent algorithm to apply to the data block; and applying the appropriate content dependent data compression algorithm to the data block to provide a compressed data block when the characteristic, attribute, or parameter is identified” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, deduplication performs substantially the same function (for example, reducing the overall amount of bits to store) in substantially the same way (by, for example, applying a technique based on the specific content of the incoming data in order to present for storage fewer overall bits) to achieve substantially the same result (for example, storage of fewer bits of data overall). *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most mature on the market. It’s a great piece of software.’”); <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times.”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5

(“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

203. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “wherein the analyzing the plurality of data blocks to recognize when the appropriate content independent compression algorithm is to be applied excludes analyzing based only on a descriptor indicative of the any characteristic, attribute, or parameter, and wherein the analyzing the data block to recognize the any characteristic, attribute, or parameter excludes analyzing based only on the descriptor.” *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most mature on the market. It’s a great piece of software.’”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi6500 systems use compression technology after duplicate blocks have been identified and replaced as part of the deduplication

process. With compression, unique data that has been through the data deduplication process can be compressed at a typical ratio of approximately 2:1. This enables you to maximize the storage capacity of your system.”);

<http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times.”);

<http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in

the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

204. On information and belief, Fujitsu also directly infringes and continues to infringe other claims of the ‘513 patent, for similar reasons as explained above with respect to Claim 1 of the ‘513 patent.

205. On information and belief, all of the Accused Instrumentalities constitute the claimed systems in substantially the same way.

206. On information and belief, use of the Accused Instrumentality in its ordinary and customary fashion results in infringement of the systems claimed by the ‘513 patent.

207. On information and belief, Fujitsu has had knowledge of the ‘513 patent since at least the filing of this Complaint or shortly thereafter, and on information and belief, Fujitsu knew of the ‘513 patent and knew of its infringement, including by way of this lawsuit.

208. Fujitsu’s affirmative acts of making, using, selling, offering for sale, and/or importing the Accused Instrumentalities have induced and continue to induce end-users of the Accused Instrumentalities to use the Accused Instrumentalities in their normal and customary way to infringe the ‘513 patent by practicing compression methods claimed by the ‘513 patent, including a method of compressing a plurality of data blocks, comprising: analyzing the plurality of data blocks to recognize when an appropriate content independent compression algorithm is to be applied to the plurality of data blocks; applying the appropriate content independent data compression algorithm to a portion of the plurality of data blocks to provide a compressed data portion; analyzing a data block from another portion of the plurality of data blocks for recognition of any characteristic, attribute, or parameter that is indicative of an appropriate content dependent algorithm to apply to the data block; and applying the appropriate content dependent data compression algorithm to the data block to provide a compressed data block when the characteristic, attribute, or parameter is identified, wherein the analyzing the plurality of data blocks to recognize when the appropriate content independent compression algorithm is to be applied excludes analyzing based only on a descriptor indicative of the any characteristic, attribute,

or parameter, and wherein the analyzing the data block to recognize the any characteristic, attribute, or parameter excludes analyzing based only on the descriptor. For example, Fujitsu instructs users of the Fujitsu CS800 Data Protection Appliance about the advantages of its deduplication and compression features. *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most mature on the market. It’s a great piece of software.’”); https://www.fujitsu.com/global/Images/wp-eternus-cs8000-technical-concepts-ww-en_FJJ.pdf at 4 (“ETERNUS CS800 is a data protection appliance optimized for environments where IT-organizations want replace backup to traditional tape by backup to disk. Utilizing leading deduplication and compression technology, the disk capacity requirements can be reduced by up to 95%. ... Data deduplication technology reduces disk capacity requirements such enabling large cost savings.”). Thus, with knowledge of the ‘513 patent gained from at least the filing and service of the original Complaint in this action, Fujitsu encouraged users of the Accused Instrumentalities to use their deduplication/compression functionality to infringe the ‘513 patent, knowing that such use constituted infringement of the ‘513 patent.

209. By making, using, offering for sale, selling and/or importing into the United States the Accused Instrumentalities, and touting the benefits of using the Accused Instrumentalities’ compression features, Fujitsu has injured Realtime and is liable to Realtime for infringement of the ‘513 patent pursuant to 35 U.S.C. § 271.

210. As a result of Fujitsu’s infringement of the ‘513 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Fujitsu’s infringement, but in no event less than a reasonable royalty for the use made of the invention by Fujitsu, together with interest and costs as fixed by the Court.

Quantum DXi

211. On information and belief, Quantum has made, used, offered for sale, sold and/or

imported into the United States Quantum products that infringe the '513 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, Quantum's compression products and services, such as, *e.g.*, Quantum's DXi software (*e.g.*, powered by Quantum StorNext high-performance file system) (including as incorporated into third-party products such as the Fujitsu Eternus CS800 Data Protection Appliance), DXi 2500, DXi 3500, DXi 4500, DXi 4700 (*e.g.* DXi 4701), DXi 6500 (*e.g.* DXi 6510, DXi 6520, DXi 6530, DXi 6540, DXi 6550), DXi 6800, DXi 6900, DXi 7500, and DXi 8500 Deduplication Appliances, DXi V-Series (*e.g.* DXi V4000) virtual deduplication backup appliance, Q-Cloud Protect virtual deduplication appliance, Quantum GoProtect Software, and all versions and variations thereof since the issuance of the '513 patent ("Accused Instrumentality").

212. On information and belief, Quantum has directly infringed and continues to infringe Claim 1 of the '513 patent, for example, through its own use and testing of the Accused Instrumentalities to practice compression methods claimed by the '513 patent, including a method of compressing a plurality of data blocks, comprising: analyzing the plurality of data blocks to recognize when an appropriate content independent compression algorithm is to be applied to the plurality of data blocks; applying the appropriate content independent data compression algorithm to a portion of the plurality of data blocks to provide a compressed data portion; analyzing a data block from another portion of the plurality of data blocks for recognition of any characteristic, attribute, or parameter that is indicative of an appropriate content dependent algorithm to apply to the data block; and applying the appropriate content dependent data compression algorithm to the data block to provide a compressed data block when the characteristic, attribute, or parameter is identified, wherein the analyzing the plurality of data blocks to recognize when the appropriate content independent compression algorithm is to be applied excludes analyzing based only on a descriptor indicative of the any characteristic, attribute, or parameter, and wherein the analyzing the data block to recognize the any characteristic, attribute, or parameter excludes analyzing based only on the descriptor. Upon information and belief, Quantum uses the Accused Instrumentality, an infringing system, for its own internal non-testing business purposes, while testing the Accused

Instrumentality, and while providing technical support for the Accused Instrumentality to Quantum's customers.

213. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, "a method of compressing a plurality of data blocks, comprising: analyzing the plurality of data blocks to recognize when an appropriate content independent compression algorithm is to be applied to the plurality of data blocks; applying the appropriate content independent data compression algorithm to a portion of the plurality of data blocks to provide a compressed data portion." *See, e.g.,* <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 ("The DXi6500 systems use compression technology after duplicate blocks have been identified and replaced as part of the deduplication process. With compression, unique data that has been through the data deduplication process can be compressed at a typical ratio of approximately 2:1. This enables you to maximize the storage capacity of your system.").

214. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, "analyzing a data block from another portion of the plurality of data blocks for recognition of any characteristic, attribute, or parameter that is indicative of an appropriate content dependent algorithm to apply to the data block; and applying the appropriate content dependent data compression algorithm to the data block to provide a compressed data block when the characteristic, attribute, or parameter is identified". Even if the deduplication function in the Accused Instrumentality were found to not literally meet the "analyzing a data block from another portion of the plurality of data blocks for recognition of any characteristic, attribute, or parameter that is indicative of an appropriate content dependent algorithm to apply to the data block; and applying the appropriate content dependent data compression algorithm to the data block to provide a compressed data block when the characteristic, attribute, or parameter is identified" limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, deduplication performs substantially the same function (for example, reducing the overall amount of bits to store)

in substantially the same way (by, for example, applying a technique based on the specific content of the incoming data in order to present for storage fewer overall bits) to achieve substantially the same result (for example, storage of fewer bits of data overall). *See, e.g.,* <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times.”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in

the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

215. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “wherein the analyzing the plurality of data blocks to recognize when the appropriate content independent compression algorithm is to be applied excludes analyzing based only on a descriptor indicative of the any characteristic, attribute, or parameter, and wherein the analyzing the data block to recognize the any characteristic, attribute, or parameter excludes analyzing based only on the descriptor.” *See, e.g.*, <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi6500 systems use compression technology after duplicate blocks have been identified and replaced as part of the deduplication process. With compression, unique data that has been through the data deduplication process can be compressed at a typical ratio of approximately 2:1. This enables you to maximize the storage capacity of your system.”); <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times.”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with

conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum's innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

216. On information and belief, Quantum also directly infringes and continues to infringe other claims of the ‘513 patent, for similar reasons as explained above with respect to Claim 1 of the ‘513 patent.

217. On information and belief, all of the Accused Instrumentalities constitute the claimed systems in substantially the same way.

218. On information and belief, use of the Accused Instrumentality in its ordinary and customary fashion results in infringement of the systems claimed by the ‘513 patent.

219. On information and belief, Quantum has had knowledge of the ‘513 patent since at least the filing of this Complaint or shortly thereafter, and on information and belief, Quantum knew of the ‘513 patent and knew of its infringement, including by way of this lawsuit.

220. Quantum's affirmative acts of making, using, selling, offering for sale, and/or importing the Accused Instrumentalities have induced and continue to induce end-users of the Accused Instrumentalities to use the Accused Instrumentalities in their normal and customary way to infringe the ‘513 patent by practicing compression methods claimed by the ‘513 patent, including a method of compressing a plurality of data blocks, comprising: analyzing the plurality

of data blocks to recognize when an appropriate content independent compression algorithm is to be applied to the plurality of data blocks; applying the appropriate content independent data compression algorithm to a portion of the plurality of data blocks to provide a compressed data portion; analyzing a data block from another portion of the plurality of data blocks for recognition of any characteristic, attribute, or parameter that is indicative of an appropriate content dependent algorithm to apply to the data block; and applying the appropriate content dependent data compression algorithm to the data block to provide a compressed data block when the characteristic, attribute, or parameter is identified, wherein the analyzing the plurality of data blocks to recognize when the appropriate content independent compression algorithm is to be applied excludes analyzing based only on a descriptor indicative of the any characteristic, attribute, or parameter, and wherein the analyzing the data block to recognize the any characteristic, attribute, or parameter excludes analyzing based only on the descriptor. For example, Quantum instructs users of DXi about the advantages of its deduplication and compression features. *See, e.g.,* <https://www.scribd.com/document/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. ... The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”). Thus, with knowledge of the ‘513 patent gained from at least the filing and service of the original Complaint in this action, Quantum encouraged users of the Accused Instrumentalities to use their

deduplication/compression functionality to infringe the '513 patent, knowing that such use constituted infringement of the '513 patent.

221. By making, using, offering for sale, selling and/or importing into the United States the Accused Instrumentalities, and touting the benefits of using the Accused Instrumentalities' compression features, Quantum has injured Realtime and is liable to Realtime for infringement of the '513 patent pursuant to 35 U.S.C. § 271.

222. As a result of Quantum's infringement of the '513 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Quantum's infringement, but in no event less than a reasonable royalty for the use made of the invention by Quantum, together with interest and costs as fixed by the Court.

Quantum DXi Accent

223. On information and belief, Quantum has made, used, offered for sale, sold and/or imported into the United States Quantum products that infringe the '513 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, Quantum's compression products and services, such as, *e.g.*, Quantum's DXi Accent, and all versions and variations thereof since the issuance of the '513 patent ("Accused Instrumentality").

224. On information and belief, Quantum has directly infringed and continues to infringe Claim 1 of the '513 patent, for example, through its own use and testing of the Accused Instrumentalities to practice compression methods claimed by the '513 patent, including a method of compressing a plurality of data blocks, comprising: analyzing the plurality of data blocks to recognize when an appropriate content independent compression algorithm is to be applied to the plurality of data blocks; applying the appropriate content independent data compression algorithm to a portion of the plurality of data blocks to provide a compressed data portion; analyzing a data block from another portion of the plurality of data blocks for recognition of any characteristic, attribute, or parameter that is indicative of an appropriate content dependent algorithm to apply to the data block; and applying the appropriate content dependent data compression algorithm to the data block to provide a compressed data block when the characteristic, attribute, or parameter is

identified, wherein the analyzing the plurality of data blocks to recognize when the appropriate content independent compression algorithm is to be applied excludes analyzing based only on a descriptor indicative of the any characteristic, attribute, or parameter, and wherein the analyzing the data block to recognize the any characteristic, attribute, or parameter excludes analyzing based only on the descriptor. Upon information and belief, Quantum uses the Accused Instrumentality, an infringing system, for its own internal non-testing business purposes, while testing the Accused Instrumentality, and while providing technical support for the Accused Instrumentality to Quantum's customers.

225. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, "a method of compressing a plurality of data blocks, comprising: analyzing the plurality of data blocks to recognize when an appropriate content independent compression algorithm is to be applied to the plurality of data blocks; applying the appropriate content independent data compression algorithm to a portion of the plurality of data blocks to provide a compressed data portion." *See, e.g.,* <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 ("With DXi Accent, the backup server collaborates in the deduplication process by carrying out the initial deduplication phases, specifically: 1) Dividing the stream of data into variable-length blocks and computing the signature for each one, 2) Collaborating with the DXi to identify the new unique blocks, and 3) Compressing the new unique blocks and transmitting them to the DXi appliance for storage in the blockpool. In order to determine the unique blocks, the signatures for all the blocks are sent by the server to the DXi appliance. The DXi compares the signatures to its central index and returns to the backup server a list of signatures for the unique blocks not already present in the blockpool. The backup server compresses these blocks and transmits them to the DXi to be stored.").

226. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, "analyzing a data block from another portion of the plurality of data blocks for recognition of any characteristic, attribute, or parameter that is indicative of an appropriate content dependent algorithm to apply to the data block; and applying the appropriate

content dependent data compression algorithm to the data block to provide a compressed data block when the characteristic, attribute, or parameter is identified”. Even if the deduplication function in the Accused Instrumentality were found to not literally meet the “analyzing a data block from another portion of the plurality of data blocks for recognition of any characteristic, attribute, or parameter that is indicative of an appropriate content dependent algorithm to apply to the data block; and applying the appropriate content dependent data compression algorithm to the data block to provide a compressed data block when the characteristic, attribute, or parameter is identified” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, deduplication performs substantially the same function (for example, reducing the overall amount of bits to store) in substantially the same way (by, for example, applying a technique based on the specific content of the incoming data in order to present for storage fewer overall bits) to achieve substantially the same result (for example, storage of fewer bits of data overall). *See, e.g.,* <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“With DXi Accent, the backup server collaborates in the deduplication process by carrying out the initial deduplication phases, specifically: 1) Dividing the stream of data into variable-length blocks and computing the signature for each one, 2) Collaborating with the DXi to identify the new unique blocks, and 3) Compressing the new unique blocks and transmitting them to the DXi appliance for storage in the blockpool. In order to determine the unique blocks, the signatures for all the blocks are sent by the server to the DXi appliance. The DXi compares the signatures to its central index and returns to the backup server a list of signatures for the unique blocks not already present in the blockpool. ... For blocks already present in the blockpool, the DXi simply stores a pointer to the existing block.”).

227. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “wherein the analyzing the plurality of data blocks to recognize when the appropriate content independent compression algorithm is to be applied excludes analyzing based only on a descriptor indicative of the any characteristic, attribute, or parameter,

and wherein the analyzing the data block to recognize the any characteristic, attribute, or parameter excludes analyzing based only on the descriptor.” *See, e.g.,* <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“With DXi Accent, the backup server collaborates in the deduplication process by carrying out the initial deduplication phases, specifically: 1) Dividing the stream of data into variable-length blocks and computing the signature for each one, 2) Collaborating with the DXi to identify the new unique blocks, and 3) Compressing the new unique blocks and transmitting them to the DXi appliance for storage in the blockpool. In order to determine the unique blocks, the signatures for all the blocks are sent by the server to the DXi appliance. The DXi compares the signatures to its central index and returns to the backup server a list of signatures for the unique blocks not already present in the blockpool. The backup server compresses these blocks and transmits them to the DXi to be stored.”).

228. On information and belief, Quantum also directly infringes and continues to infringe other claims of the ‘513 patent, for similar reasons as explained above with respect to Claim 1 of the ‘513 patent.

229. On information and belief, all of the Accused Instrumentalities constitute the claimed systems in substantially the same way.

230. On information and belief, use of the Accused Instrumentality in its ordinary and customary fashion results in infringement of the systems claimed by the ‘513 patent.

231. On information and belief, Quantum has had knowledge of the ‘513 patent since at least the filing of this Complaint or shortly thereafter, and on information and belief, Quantum knew of the ‘513 patent and knew of its infringement, including by way of this lawsuit.

232. Quantum’s affirmative acts of making, using, selling, offering for sale, and/or importing the Accused Instrumentalities have induced and continue to induce end-users of the Accused Instrumentalities to use the Accused Instrumentalities in their normal and customary way to infringe the ‘513 patent by practicing compression methods claimed by the ‘513 patent, including a method of compressing a plurality of data blocks, comprising: analyzing the plurality of data blocks to recognize when an appropriate content independent compression algorithm is to

be applied to the plurality of data blocks; applying the appropriate content independent data compression algorithm to a portion of the plurality of data blocks to provide a compressed data portion; analyzing a data block from another portion of the plurality of data blocks for recognition of any characteristic, attribute, or parameter that is indicative of an appropriate content dependent algorithm to apply to the data block; and applying the appropriate content dependent data compression algorithm to the data block to provide a compressed data block when the characteristic, attribute, or parameter is identified, wherein the analyzing the plurality of data blocks to recognize when the appropriate content independent compression algorithm is to be applied excludes analyzing based only on a descriptor indicative of the any characteristic, attribute, or parameter, and wherein the analyzing the data block to recognize the any characteristic, attribute, or parameter excludes analyzing based only on the descriptor. For example, Quantum instructs users of DXi Accent about the advantages of its deduplication and compression features. *See, e.g.*, <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“DXi Accent is software from Quantum that enables a hybrid or collaborative approach to deduplication, combining the best features of both target and source-based systems. DXi Accent uses variable-length deduplication for the most effective data reduction, and it takes advantage of purpose-built DXi appliances for scalability, performance, and ease of integration, but it moves a portion of the deduplication process to the backup server so that only unique blocks are transmitted to the target appliance. This system, which leverages much of the underlying functionality of the DXi replication, allows DXi Accent to accelerate backups where network bandwidth is the limiting factor while limiting the impact on the backup server and maintaining DXi features that integrate deduplication effectively into the larger data protection environment. ... For example, for a backup where 10% of the blocks are new, the potential effective transmission rate will be approximately 10 times more than when using a target-based approach alone. ... This division of tasks between the backup server and DXi maximizes end-to-end performance while minimizing loading effects on the backup server because it leaves most of the processor-intensive tasks on the appliance ... As a result, the backup server requirements for DXi Accent are significantly lower than for

traditional source-based architectures, and much more data can be protected with the same resources.”). Thus, with knowledge of the ‘513 patent gained from at least the filing and service of the original Complaint in this action, Quantum encouraged users of the Accused Instrumentalities to use their deduplication/compression functionality to infringe the ‘513 patent, knowing that such use constituted infringement of the ‘513 patent.

233. By making, using, offering for sale, selling and/or importing into the United States the Accused Instrumentalities, and touting the benefits of using the Accused Instrumentalities’ compression features, Quantum has injured Realtime and is liable to Realtime for infringement of the ‘513 patent pursuant to 35 U.S.C. § 271.

234. As a result of Quantum’s infringement of the ‘513 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Quantum’s infringement, but in no event less than a reasonable royalty for the use made of the invention by Quantum, together with interest and costs as fixed by the Court.

COUNT VI

INFRINGEMENT OF U.S. PATENT NO. 9,116,908

235. Plaintiff Realtime realleges and incorporates by reference paragraphs 1-234 above, as if fully set forth herein.

236. Plaintiff Realtime is the owner by assignment of United States Patent No. 9,116,908 (“the ‘908 Patent”) entitled “System and methods for accelerated data storage and retrieval.” The ‘908 Patent was duly and legally issued by the United States Patent and Trademark Office on August 25, 2015. A true and correct copy of the ‘908 Patent is included as Exhibit F.

Fujitsu Eternus Data Protection Appliance

237. On information and belief, Fujitsu has made, used, offered for sale, sold and/or imported into the United States Fujitsu products that infringe the ‘908 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, Fujitsu’s compression products and services, such as, *e.g.*, the Fujitsu Eternus CS 800, Eternus CS 8000, Eternus CS HE, Eternus CS 200c, Eternus DX, and Eternus LT Data Protection Appliances and

all versions and variations thereof since the issuance of the '908 patent ("Accused Instrumentality").

238. On information and belief, Fujitsu has directly infringed and continues to infringe the '908 patent, for example, through its own use, testing, sale, offer for sale, and/or importation of the Accused Instrumentalities and computer systems running the Accused Instrumentalities, which when used as designed and intended, constitute a system comprising: a memory device; and a data accelerator configured to compress: (i) a first data block with a first compression technique to provide a first compressed data block; and (ii) a second data block with a second compression technique, different from the first compression technique, to provide a second compressed data block; wherein the compressed first and second data blocks are stored on the memory device, and the compression and storage occurs faster than the first and second data blocks are able to be stored on the memory device in uncompressed form, thereby infringing the '908 Patent. Upon information and belief, Fujitsu uses the Accused Instrumentality to practice infringing methods for its own internal non-testing business purposes, while testing the Accused Instrumentality, and while providing technical support for the Accused Instrumentality to Fujitsu's customers.

239. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, "a system comprising: a memory device". *See, e.g.,* <http://www.fujitsu.com/fts/products/computing/storage/data-protection/cs800/> ("FUJITSU Storage ETERNUS CS800 is a turnkey data protection appliance and provides a simple and affordable solution for customers which follow a disk backup strategy with deduplication. The advanced deduplication technology reduces typical disk capacity requirements for disk to disk backup by up to 95%.").

240. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, "a data accelerator configured to compress: (i) a first data block with a first compression technique to provide a first compressed data block; and (ii) a second data block with a second compression technique, different from the first compression technique, to provide a second compressed data block." Even if the determination of whether particular data

within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality were found not to literally meet the “compression technique” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, determining whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality performs substantially the same function (for example, to provide the Accused Instrumentality with some parameter of the data that can be used as a basis to select the optimal data compression method among multiple available data compression methods) in substantially the same way (by, for example, identifying some characteristic of the data, beyond a mere descriptor that is indicative of the data type of the data within the data block, that is relevant to selecting among multiple available data compression methods) to achieve substantially the same result (for example, enabling the Accused Instrumentality to select the optimal data compression method from among multiple available data compression methods). *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most mature on the market. It’s a great piece of software.’”); <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method, duplicate data segments can be found at different locations inside a file, inside different files, inside

files created by different applications, and inside files created at different times.”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network. ... The DXi6500 systems use compression technology after duplicate blocks have been identified and replaced as part of the deduplication process. With compression, unique data that has been through the data deduplication process can be compressed at a typical ratio of approximately 2:1. This enables you to maximize the storage capacity of your system.”).

241. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “wherein the compressed first and second data blocks are stored on the memory device”. *See, e.g.*, <http://www.fujitsu.com/fts/products/computing/storage/data-protection/cs800/> (“FUJITSU Storage ETERNUS CS800 is a turnkey data protection appliance and provides a simple and affordable solution for customers which follow a disk backup strategy with deduplication. The advanced deduplication technology reduces typical disk capacity

requirements for disk to disk backup by up to 95%.”); <http://www.fujitsu.com/fts/about/resources/news/press-releases/2013/CEMEAI-131105-Fujitsu-Delivers-Complete-Infrastructure.html> (“Powerful deduplication technology is now integrated into the ETERNUS CS8000 internal disk cache, making it suitable as a highly-efficient final backup target. New deduplication capabilities reduce disk space requirements by a factor of between 10 and 50 times.”)

242. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “and the compression and storage occurs faster than the first and second data blocks are able to be stored on the memory device in uncompressed form.” *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ (“But inside the CS800 S2 is Quantum’s DXi deduplication software technology. Marcus Schneider, Fujitsu’s director of storage product marketing, admitted this. He said: ‘We believe the Quantum stack is the most mature on the market. It’s a great piece of software.’”); <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Since the benefit of deduplication is two-fold: (1) reduce data stored on disk, and (2) reduce network traffic (LAN or WAN), a 2x or 10x difference in data reduction can have very material impact to storage, network and cloud costs. ... Data deduplication makes the process of replicating backup data practical by reducing the bandwidth and cost needed to create and maintain duplicate data sets over networks. At a basic level, deduplication-enabled replication is similar to deduplication-enabled data stores. Once two images of a backup data store are created, all that is required to keep the replica or target identical to the source is the periodic copying and movement of the new data segments added during each backup event, along with its metadata image, or namespace.”).

243. On information and belief, Fujitsu also directly infringes and continues to infringe other claims of the ‘908 patent, for similar reasons as explained above with respect to Claim 1 of the ‘908 patent.

244. On information and belief, all of the Accused Instrumentalities constitute the claimed system in substantially the same way.

245. On information and belief, use of the Accused Instrumentality in its ordinary and customary fashion results in infringement of the methods claimed by the '908 patent.

246. On information and belief, Fujitsu has had knowledge of the '908 patent at least since the filing of this Complaint or shortly thereafter, and on information and belief, Fujitsu knew of the '908 patent and knew of its infringement, including by way of this lawsuit.

247. Fujitsu's affirmative acts of making, using, selling, offering for sale, and/or importing the Accused Instrumentalities have induced and continue to induce users of the Accused Instrumentalities to use the Accused Instrumentalities in their normal and customary way on compatible systems to infringe the '908 patent, knowing that when the Accused Instrumentalities are used in their ordinary and customary manner with such compatible systems, such systems are converted into infringing systems comprising: a memory device; and a data accelerator configured to compress: (i) a first data block with a first compression technique to provide a first compressed data block; and (ii) a second data block with a second compression technique, different from the first compression technique, to provide a second compressed data block; wherein the compressed first and second data blocks are stored on the memory device, and the compression and storage occurs faster than the first and second data blocks are able to be stored on the memory device in uncompressed form, thereby infringing the '908 Patent. For example, Fujitsu instructs users of the Fujitsu CS800 Data Protection Appliance about the advantages of its deduplication and compression features. *See, e.g.,* http://www.theregister.co.uk/2010/10/27/netapp_quantum_and_fujitsu/ ("But inside the CS800 S2 is Quantum's DXi deduplication software technology. Marcus Schneider, Fujitsu's director of storage product marketing, admitted this. He said: 'We believe the Quantum stack is the most mature on the market. It's a great piece of software.'"); https://www.fujitsu.com/global/Images/wp-eternus-cs8000-technical-concepts-ww-en_FJJ.pdf at 4 ("ETERNUS CS800 is a data protection appliance optimized for environments where IT-organizations want replace backup to traditional tape by backup to disk. Utilizing leading deduplication and compression technology, the disk capacity requirements can be reduced by up

to 95%. ... Data deduplication technology reduces disk capacity requirements such enabling large cost savings.”). Thus, with knowledge of the ‘908 patent gained from at least the filing and service of the original Complaint in this action, Fujitsu encouraged users of the Accused Instrumentalities to use their deduplication/compression functionality to infringe the ‘908 patent, knowing that such use constituted infringement of the ‘908 patent.

248. For similar reasons, Fujitsu also induces its customers to use the Accused Instrumentalities to infringe other claims of the ‘908 patent. Fujitsu specifically intended and was aware that these normal and customary activities would infringe the ‘908 patent. Fujitsu performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the ‘908 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, Fujitsu engaged in such inducement to promote the sales of the Accused Instrumentalities. Accordingly, Fujitsu has induced and continues to induce users of the Accused Instrumentalities to use the Accused Instrumentalities in their ordinary and customary way to infringe the ‘908 patent, knowing that such use constitutes infringement of the ‘908 patent.

249. By making, using, offering for sale, selling and/or importing into the United States the Accused Instrumentalities, and touting the benefits of using the Accused Instrumentalities’ compression features, Fujitsu has injured Realtime and is liable to Realtime for infringement of the ‘908 patent pursuant to 35 U.S.C. § 271.

250. As a result of Fujitsu’s infringement of the ‘908 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Fujitsu’s infringement, but in no event less than a reasonable royalty for the use made of the invention by Fujitsu, together with interest and costs as fixed by the Court.

Quantum DXi

251. On information and belief, Quantum has made, used, offered for sale, sold and/or imported into the United States Quantum products that infringe the ‘908 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation,

Quantum's compression products and services, such as, *e.g.*, Quantum's DXi software (*e.g.*, powered by Quantum StorNext high-performance file system) (including as incorporated into third-party products such as the Fujitsu Eternus CS800 Data Protection Appliance), DXi 2500, DXi 3500, DXi 4500, DXi 4700 (*e.g.* DXi 4701), DXi 6500 (*e.g.* DXi 6510, DXi 6520, DXi 6530, DXi 6540, DXi 6550), DXi 6800, DXi 6900, DXi 7500, and DXi 8500 Deduplication Appliances, DXi V-Series (*e.g.* DXi V4000) virtual deduplication backup appliance, Q-Cloud Protect virtual deduplication appliance, Quantum GoProtect Software, and all versions and variations thereof since the issuance of the '908 patent ("Accused Instrumentality").

252. On information and belief, Quantum has directly infringed and continues to infringe the '908 patent, for example, through its own use, testing, sale, offer for sale, and/or importation of the Accused Instrumentalities and computer systems running the Accused Instrumentalities, which when used as designed and intended, constitute a system comprising: a memory device; and a data accelerator configured to compress: (i) a first data block with a first compression technique to provide a first compressed data block; and (ii) a second data block with a second compression technique, different from the first compression technique, to provide a second compressed data block; wherein the compressed first and second data blocks are stored on the memory device, and the compression and storage occurs faster than the first and second data blocks are able to be stored on the memory device in uncompressed form, thereby infringing the '908 Patent. Upon information and belief, Quantum uses the Accused Instrumentality to practice infringing methods for its own internal non-testing business purposes, while testing the Accused Instrumentality, and while providing technical support for the Accused Instrumentality to Quantum's customers.

253. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, "a system comprising: a memory device". *See, e.g.*, <https://www.scribd.com/document/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 9 ("The DXi6500 system is based upon high speed disk drives instead of tape drives ... To optimize performance, the DXi6500 uses both hard disk drives (HDDs) and solid state drives (SSDs).").

254. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “a data accelerator configured to compress: (i) a first data block with a first compression technique to provide a first compressed data block; and (ii) a second data block with a second compression technique, different from the first compression technique, to provide a second compressed data block.” Even if the determination of whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality were found not to literally meet the “compression technique” limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover, determining whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality performs substantially the same function (for example, to provide the Accused Instrumentality with some parameter of the data that can be used as a basis to select the optimal data compression method among multiple available data compression methods) in substantially the same way (by, for example, identifying some characteristic of the data, beyond a mere descriptor that is indicative of the data type of the data within the data block, that is relevant to selecting among multiple available data compression methods) to achieve substantially the same result (for example, enabling the Accused Instrumentality to select the optimal data compression method from among multiple available data compression methods). *See, e.g.,* <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Data deduplication used and implemented by Quantum is the specific approach to data reduction built on a methodology that systematically substitutes reference pointers for redundant variable-length blocks (or data segments) in a specific data set. Quantum’s deduplication technology divides the data stream into variable-length data segments using a data-dependent methodology that can find the same block boundaries in different locations and contexts. This block-creation process allows the boundaries to “float” within the data stream so that changes in one part of the data set have little or no impact on the boundaries in other locations of the data set. Through this method,

duplicate data segments can be found at different locations inside a file, inside different files, inside files created by different applications, and inside files created at different times.”); <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The DXi-Series disk backup and replication systems use Quantum’s patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum’s innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network. ... The DXi6500 systems use compression technology after duplicate blocks have been identified and replaced as part of the deduplication process. With compression, unique data that has been through the data deduplication process can be compressed at a typical ratio of approximately 2:1. This enables you to maximize the storage capacity of your system.”).

255. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “wherein the compressed first and second data blocks are stored on the memory device”. *See, e.g.*, <http://www.scribd.com/doc/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 (“The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance,

manageability, and value. Quantum's deduplication technology uses a sub-file, variable-length approach to identify redundant blocks in a data stream—blocks that have appeared before in the same dataset or in datasets processed at an earlier time. When a block appears that has already been stored, the DXi system inserts a reference pointer to the earlier instance of the data segment instead of storing another copy. The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network.”).

256. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “and the compression and storage occurs faster than the first and second data blocks are able to be stored on the memory device in uncompressed form.” *See, e.g.,* <http://www.quantum.com/technologies/deduplicationreplication/index.aspx> (“Since the benefit of deduplication is two-fold: (1) reduce data stored on disk, and (2) reduce network traffic (LAN or WAN), a 2x or 10x difference in data reduction can have very material impact to storage, network and cloud costs. ... Data deduplication makes the process of replicating backup data practical by reducing the bandwidth and cost needed to create and maintain duplicate data sets over networks. At a basic level, deduplication-enabled replication is similar to deduplication-enabled data stores. Once two images of a backup data store are created, all that is required to keep the replica or target identical to the source is the periodic copying and movement of the new data segments added during each backup event, along with its metadata image, or namespace.”).

257. On information and belief, Quantum also directly infringes and continues to infringe other claims of the ‘908 patent, for similar reasons as explained above with respect to Claim 1 of the ‘908 patent.

258. On information and belief, all of the Accused Instrumentalities constitute the claimed system in substantially the same way.

259. On information and belief, use of the Accused Instrumentality in its ordinary and customary fashion results in infringement of the methods claimed by the ‘908 patent.

260. On information and belief, Quantum has had knowledge of the ‘908 patent at least

since the filing of this Complaint or shortly thereafter, and on information and belief, Quantum knew of the '908 patent and knew of its infringement, including by way of this lawsuit.

261. Quantum's affirmative acts of making, using, selling, offering for sale, and/or importing the Accused Instrumentalities have induced and continue to induce users of the Accused Instrumentalities to use the Accused Instrumentalities in their normal and customary way on compatible systems to infringe the '908 patent, knowing that when the Accused Instrumentalities are used in their ordinary and customary manner with such compatible systems, such systems are converted into infringing systems comprising: a memory device; and a data accelerator configured to compress: (i) a first data block with a first compression technique to provide a first compressed data block; and (ii) a second data block with a second compression technique, different from the first compression technique, to provide a second compressed data block; wherein the compressed first and second data blocks are stored on the memory device, and the compression and storage occurs faster than the first and second data blocks are able to be stored on the memory device in uncompressed form, thereby infringing the '908 Patent. For example, Quantum instructs users of DXi about the advantages of its deduplication and compression features. *See, e.g.,* <https://www.scribd.com/document/98815319/6-67083-01-Users-Guide-DXi6500-RevA#scribd> at 5 ("The DXi-Series disk backup and replication systems use Quantum's patented data deduplication technology to dramatically increase the role that disk can play in data protection. With DXi-Series solutions, users can retain 10 to 50 times more backup data on fast recovery disk than with conventional arrays. This advantage allows IT departments to cost-effectively retain months of backup data on disk for faster, more reliable restores and more data recovery points. Quantum's innovative implementation of this core technology means that users do not have to compromise on performance to take advantage of extended retention capability. The new, inline data flow in the DXi 2.0 software provides streamlined deduplication that offers a maximum combination of total system performance, manageability, and value. ... The result is a dramatic reduction in the storage capacity needed to store the data set, and a similar reduction in the bandwidth needed to replicate deduplicated data sets over a network."). Thus, with knowledge of

the '908 patent gained from at least the filing and service of the original Complaint in this action, Quantum encouraged users of the Accused Instrumentalities to use their deduplication/compression functionality to infringe the '908 patent, knowing that such use constituted infringement of the '908 patent.

262. For similar reasons, Quantum also induces its customers to use the Accused Instrumentalities to infringe other claims of the '908 patent. Quantum specifically intended and was aware that these normal and customary activities would infringe the '908 patent. Quantum performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the '908 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, Quantum engaged in such inducement to promote the sales of the Accused Instrumentalities. Accordingly, Quantum has induced and continues to induce users of the Accused Instrumentalities to use the Accused Instrumentalities in their ordinary and customary way to infringe the '908 patent, knowing that such use constitutes infringement of the '908 patent.

263. By making, using, offering for sale, selling and/or importing into the United States the Accused Instrumentalities, and touting the benefits of using the Accused Instrumentalities' compression features, Quantum has injured Realtime and is liable to Realtime for infringement of the '908 patent pursuant to 35 U.S.C. § 271.

264. As a result of Quantum's infringement of the '908 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Quantum's infringement, but in no event less than a reasonable royalty for the use made of the invention by Quantum, together with interest and costs as fixed by the Court.

Quantum DXi Accent

265. On information and belief, Quantum has made, used, offered for sale, sold and/or imported into the United States Quantum products that infringe the '908 patent, and continues to do so. By way of illustrative example, these infringing products include, without limitation, Quantum's compression products and services, such as, *e.g.*, Quantum's DXi Accent, and all

versions and variations thereof since the issuance of the '908 patent ("Accused Instrumentality").

266. On information and belief, Quantum has directly infringed and continues to infringe the '908 patent, for example, through its own use, testing, sale, offer for sale, and/or importation of the Accused Instrumentalities and computer systems running the Accused Instrumentalities, which when used as designed and intended, constitute a system comprising: a memory device; and a data accelerator configured to compress: (i) a first data block with a first compression technique to provide a first compressed data block; and (ii) a second data block with a second compression technique, different from the first compression technique, to provide a second compressed data block; wherein the compressed first and second data blocks are stored on the memory device, and the compression and storage occurs faster than the first and second data blocks are able to be stored on the memory device in uncompressed form, thereby infringing the '908 Patent. Upon information and belief, Quantum uses the Accused Instrumentality to practice infringing methods for its own internal non-testing business purposes, while testing the Accused Instrumentality, and while providing technical support for the Accused Instrumentality to Quantum's customers.

267. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, "a system comprising: a memory device". *See, e.g.,* <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (Figure 1) ("Data written to disk").

268. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, "a data accelerator configured to compress: (i) a first data block with a first compression technique to provide a first compressed data block; and (ii) a second data block with a second compression technique, different from the first compression technique, to provide a second compressed data block." Even if the determination of whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality were found not to literally meet the "compression technique" limitation, this limitation is met under the doctrine of equivalents because it is insubstantially different from what the limitation literally requires. Moreover,

determining whether particular data within a data block of an input data stream is duplicative of data that has been previously compressed and/or stored by the Accused Instrumentality performs substantially the same function (for example, to provide the Accused Instrumentality with some parameter of the data that can be used as a basis to select the optimal data compression method among multiple available data compression methods) in substantially the same way (by, for example, identifying some characteristic of the data, beyond a mere descriptor that is indicative of the data type of the data within the data block, that is relevant to selecting among multiple available data compression methods) to achieve substantially the same result (for example, enabling the Accused Instrumentality to select the optimal data compression method from among multiple available data compression methods). *See, e.g.,* <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“This system, which leverages much of the underlying functionality of the DXi replication, allows DXi Accent to accelerate backups where network bandwidth is the limiting factor ... For example, for a backup where 10% of the blocks are new, the potential effective transmission rate will be approximately 10 times more than when using a target-based approach alone. ... With DXi Accent, the backup server collaborates in the deduplication process by carrying out the initial deduplication phases, specifically: 1) Dividing the stream of data into variable-length blocks and computing the signature for each one, 2) Collaborating with the DXi to identify the new unique blocks, and 3) Compressing the new unique blocks and transmitting them to the DXi appliance for storage in the blockpool. In order to determine the unique blocks, the signatures for all the blocks are sent by the server to the DXi appliance. The DXi compares the signatures to its central index and returns to the backup server a list of signatures for the unique blocks not already present in the blockpool. The backup server compresses these blocks and transmits them to the DXi to be stored. For blocks already present in the blockpool, the DXi simply stores a pointer to the existing block.”).

269. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “wherein the compressed first and second data blocks are stored on the memory device”. *See, e.g.,*

<https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“With DXi Accent, the backup server collaborates in the deduplication process by carrying out the initial deduplication phases, specifically: 1) Dividing the stream of data into variable-length blocks and computing the signature for each one, 2) Collaborating with the DXi to identify the new unique blocks, and 3) Compressing the new unique blocks and transmitting them to the DXi appliance for storage in the blockpool. In order to determine the unique blocks, the signatures for all the blocks are sent by the server to the DXi appliance. The DXi compares the signatures to its central index and returns to the backup server a list of signatures for the unique blocks not already present in the blockpool. The backup server compresses these blocks and transmits them to the DXi to be stored. For blocks already present in the blockpool, the DXi simply stores a pointer to the existing block.”).

270. The Accused Instrumentality satisfies literally and/or under the doctrine of equivalents the claim requirement, “and the compression and storage occurs faster than the first and second data blocks are able to be stored on the memory device in uncompressed form.” *See, e.g.,* <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 (“This system, which leverages much of the underlying functionality of the DXi replication, allows DXi Accent to accelerate backups where network bandwidth is the limiting factor ... For example, for a backup where 10% of the blocks are new, the potential effective transmission rate will be approximately 10 times more than when using a target-based approach alone.”).

271. On information and belief, Quantum also directly infringes and continues to infringe other claims of the ‘908 patent, for similar reasons as explained above with respect to Claim 1 of the ‘908 patent.

272. On information and belief, all of the Accused Instrumentalities constitute the claimed system in substantially the same way.

273. On information and belief, use of the Accused Instrumentality in its ordinary and customary fashion results in infringement of the methods claimed by the ‘908 patent.

274. On information and belief, Quantum has had knowledge of the ‘908 patent at least since the filing of this Complaint or shortly thereafter, and on information and belief, Quantum

knew of the '908 patent and knew of its infringement, including by way of this lawsuit.

275. Quantum's affirmative acts of making, using, selling, offering for sale, and/or importing the Accused Instrumentalities have induced and continue to induce users of the Accused Instrumentalities to use the Accused Instrumentalities in their normal and customary way on compatible systems to infringe the '908 patent, knowing that when the Accused Instrumentalities are used in their ordinary and customary manner with such compatible systems, such systems are converted into infringing systems comprising: a memory device; and a data accelerator configured to compress: (i) a first data block with a first compression technique to provide a first compressed data block; and (ii) a second data block with a second compression technique, different from the first compression technique, to provide a second compressed data block; wherein the compressed first and second data blocks are stored on the memory device, and the compression and storage occurs faster than the first and second data blocks are able to be stored on the memory device in uncompressed form, thereby infringing the '908 Patent. For example, Quantum instructs users of DXi Accent about the advantages of its deduplication and compression features. *See, e.g.*, <https://iq.quantum.com/exLink.asp?12448615OW64E29I68774805> at 4 ("DXi Accent is software from Quantum that enables a hybrid or collaborative approach to deduplication, combining the best features of both target and source-based systems. DXi Accent uses variable-length deduplication for the most effective data reduction, and it takes advantage of purpose-built DXi appliances for scalability, performance, and ease of integration, but it moves a portion of the deduplication process to the backup server so that only unique blocks are transmitted to the target appliance. This system, which leverages much of the underlying functionality of the DXi replication, allows DXi Accent to accelerate backups where network bandwidth is the limiting factor while limiting the impact on the backup server and maintaining DXi features that integrate deduplication effectively into the larger data protection environment. ... For example, for a backup where 10% of the blocks are new, the potential effective transmission rate will be approximately 10 times more than when using a target-based approach alone. ... This division of tasks between the backup server and DXi maximizes end-to-end performance while minimizing loading effects

on the backup server because it leaves most of the processor-intensive tasks on the appliance ... As a result, the backup server requirements for DXi Accent are significantly lower than for traditional source-based architectures, and much more data can be protected with the same resources.”). Thus, with knowledge of the ‘908 patent gained from at least the filing and service of the original Complaint in this action, Quantum encouraged users of the Accused Instrumentalities to use their deduplication/compression functionality to infringe the ‘908 patent, knowing that such use constituted infringement of the ‘908 patent.

276. For similar reasons, Quantum also induces its customers to use the Accused Instrumentalities to infringe other claims of the ‘908 patent. Quantum specifically intended and was aware that these normal and customary activities would infringe the ‘908 patent. Quantum performed the acts that constitute induced infringement, and would induce actual infringement, with the knowledge of the ‘908 patent and with the knowledge, or willful blindness to the probability, that the induced acts would constitute infringement. On information and belief, Quantum engaged in such inducement to promote the sales of the Accused Instrumentalities. Accordingly, Quantum has induced and continues to induce users of the Accused Instrumentalities to use the Accused Instrumentalities in their ordinary and customary way to infringe the ‘908 patent, knowing that such use constitutes infringement of the ‘908 patent.

277. By making, using, offering for sale, selling and/or importing into the United States the Accused Instrumentalities, and touting the benefits of using the Accused Instrumentalities’ compression features, Quantum has injured Realtime and is liable to Realtime for infringement of the ‘908 patent pursuant to 35 U.S.C. § 271.

278. As a result of Quantum’s infringement of the ‘908 patent, Plaintiff Realtime is entitled to monetary damages in an amount adequate to compensate for Quantum’s infringement, but in no event less than a reasonable royalty for the use made of the invention by Quantum, together with interest and costs as fixed by the Court.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff Realtime respectfully requests that this Court enter:

- a. A judgment in favor of Plaintiff that Fujitsu and Quantum have infringed, either literally and/or under the doctrine of equivalents, the '506 patent, the '728 patent, the '992 patent, the '530 patent, the '513 patent, and the '908 patent;
- b. A judgment and order requiring Fujitsu and Quantum to pay Plaintiff its damages, costs, expenses, and prejudgment and post-judgment interest for their infringement of the '506 patent, the '728 patent, the '992 patent, the '530 patent, the '513 patent, and the '908 patent as provided under 35 U.S.C. § 284;
- c. A judgment and order requiring Fujitsu and Quantum to provide an accounting and to pay supplemental damages to Realtime, including without limitation, prejudgment and post-judgment interest;
- d. A judgment and order finding that this is an exceptional case within the meaning of 35 U.S.C. § 285 and awarding to Plaintiff its reasonable attorneys' fees against Fujitsu and Quantum; and
- e. Any and all other relief as the Court may deem appropriate and just under the circumstances.

DEMAND FOR JURY TRIAL

Plaintiff, under Rule 38 of the Federal Rules of Civil Procedure, requests a trial by jury of any issues so triable by right.

Dated: July 21, 2016

Respectfully submitted,

/s/ Marc A. Fenster by permission Claire Henry

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